2024 Annual Report — Project 2a (Goodwood) Québec

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LIST OF ABBREVIATIONS AND SYMBOLS

DSO	Direct-Shipping Ore
EDO	Environmental discharge objectives
EE-GW	Exposure site Goodwood
EEM	Environmental effects monitoring
EIA	Environmental impact assessment
ER-GW	Reference site Goodwood
g/m²	Gram per square meter
g/m^2/30d	Gram per square meter per 30 days
LQE	*Loi sur la Qualité de l'Environnement*
m	Meter
m³/day	Cubic meter per day
mg/L	Milligram per liter
mg/kg	Milligram per kilogram
MDDEP	*Ministère du Développement Durable, Environnement et Parcs*
MDMER	Metal and Diamond Mine Environmental Regulation
MELCC	*Ministère de l'Environnement et de la Lutte contre les changements climatiques*
NL	Newfoundland and Labrador
NO_2	Nitrogen dioxide
OER	*Objectifs Environnementaux de Rejet*
PM2.5	Particulate matter (2.5 microns)
ppb	Parts per billion
SPLP	Synthetic precipitation leaching procedure
TCLP	Toxicity characteristic leaching procedure
TPM	Total particulate matter
TSMC	Tata Steel Minerals Canada Inc.
TSS	Total suspended solids
µg/L	Microgram per liter
µg/m^3	Microgram per cubic meter
QC	Québec

1 PERMITS AND AUTHORIZATION

1.1 Project 2a

Project 2a was subject to the environmental impact assessment (EIA) process; a project authorization was delivered in 2013 and modified in 2017.

In spring 2017, Tata Steel Minerals Canada (TSMC) obtained a certificate of authorization for a period of 1 year, with the condition that no effluent was to be released from the project. In February 2018, an application for a certificate of authorization was submitted for long-term operations of the Goodwood pit. Approval was granted in April 2018.

In August 2019, TSMC filed a request for modification to the existing infrastructure with the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* (MELCC). This request presented the repair work required to maintain the Goodwood accumulation basin. Since this was maintenance work on existing infrastructure, the certificate of authorization did not have to be modified.

In the fall of 2019, TSMC submitted documents to obtain an *Attestation d'Assainissement* for the project: *Exploitation d'un établissement industriel d'extraction minier: Fosse Goodwood à Schefferville*. In December 2020, the final draft of the Attestation document was received for the project from the MELCC; the final official version was received on March 22, 2021.

There were no additions or changes to these documents in 2024.

A summary table detailing the monitoring type, the location, and the dates of each monitoring program required under these authorizations that were carried out in 2024 is presented in Appendix I.

1.2 Waste rock extraction from Fleming 7 pit

For safety reasons, a volume of waste rock located in Quebec will have to be extracted in a future mining phase of the Fleming 7 orebody (located in NL). TSMC has a certificate of authorization (no. 92031100000) for this activity and there has been no change since the previous year.

2 OPERATIONS

2.1 Waste rock extraction from Fleming 7 pit

Operations at Fleming 7 pit ceased in 2015 and were restarted in 2024. All operations remained on the NL side of the border. Therefore, extraction of the waste rock located in Quebec has not started yet.

2.2 Project 2a

TSMC has decided to delay the start of the Sunny project, which is currently projected for 2037. Therefore, there were no operations in this area in 2024. The surface water and air quality monitoring activities associated with this project have been halted and will resume two years prior to the start of the project to obtain baseline data.

The operations carried out in 2024 on the Goodwood project are presented in the following sections.

2.2.1 Mining operations

There is no ore storage in the province of Québec. The ore extracted from Goodwood is transported by haul truck to the DSO3 site in Newfoundland and Labrador for crushing, screening, processing, and shipment. The ore is then transported by train in the form of DSO or as a concentrate to the port of Sept-Iles for maritime transshipment.

A total of 2,060,958 tons of ore was extracted from Goodwood in 2024, along with 615,808 tons of waste rock. There was no overburden extraction done in 2024.

2.2.2 Goodwood basin

In 2024, as in previous years, the Goodwood basin was used to accumulate water from the spring melt and during periods of heavy precipitation. Due to the low amount of snowfall during the winter period, the slow onset of spring conditions that favoured infiltration and evaporation rather than runoff, long periods without precipitation and generally dry conditions throughout the summer, the amount of water accumulated in the basin was significantly less than in previous years.

The installation of geotechnical monitoring instruments in the dike, initially scheduled for summer 2024, could not be completed. One of the instruments intended for installation in the dike was damaged in transit. The delay in receiving a new instrument and the consequent unavailability of the contractor in charge of installation prevented the instruments from being installed. Installation of the geotechnical monitoring instruments is now scheduled for summer 2025.

2.2.3 Goodwood water treatment unit

Final works to bring the water treatment plant into operation were completed on June 7th, 2024. The main tasks carried out were as follows:

- Installation of Geotube pumps and filtrate pump
- Electrical connections to pumps
- Installation of treatment chemical tanks
- Replacement of a defective fan

Following this work, the treatment plant was operated in a continuous loop until the treatment processes stabilized. A sample was taken on June 12th, 2024 to confirm the effectiveness of treatment and achievement of the Environmental Discharge Objectives. The results of this sample demonstrate that the treated water meets all environmental discharge criteria. Results are presented in Appendix II.

Since the small quantity of water in the basin was near the operating limit of the intake pump, it was not possible to operate the treatment plant other than by discharging the treated water into the basin to maintain the required water level during final commissioning and stabilization phases. Therefore, no effluent was discharged, and it was not possible to test the flow measurement equipment.

The treatment plant was winterized in late fall and will be restarted as required in spring 2025.

2.2.4 Water management infrastructure (ditches)

There was no work carried out on the water management infrastructure in 2024.

In 2023, the waste rock pile runoff catchment ditch was expanded to accommodate the future expansion of the waste rock pile, and improvements on the clean water ditch and catchment ditch along the south side of the haul road were put in place. There was therefore no additional work required in 2024.

2.3 Blast monitoring program summary

Table 1 below presents the pressure and vibration data related to blasting operations at Goodwood in 2024. The data is collected using a monitoring unit (UM12242 V 10-87 Micromate ISEE) connected to geophones (ISEE Smart geophone 725A2901) and a microphone (Linear 721A0201).

For the blasts conducted on July 19th, August 19th and November 11th, information is unavailable due to monitoring equipment faults, resulting in lost data.

Since there are no sensitive receptors in the vicinity of the blasting areas, noise and vibration monitoring is carried out within a radius of no more than 1 kilometer around the mine, as previously agreed following a notice of non-compliance received in 2022.

There were no exceedances of Directive 019 criteria regarding allowable vibration speeds in relation with vibration frequencies and air pressure threshold noted in 2024.

Table 1. Summary of blasting done at Goodwood

Blast Date	Time	Blast Pattern	Air pressure dB(L)	Peak Ground Vibration (mm/s)	ZC Frequency (Hz)
2024-03-05	12:00 PM	GD-743-71	122.35	0.573	6.5
2024-03-26	12:00 PM	GD-743-72	115.6	3.1	8.8
2024-04-29	5:00 PM	GD-743-73	110.56	0.689	6.8
2024-05-22	12:00 PM	GD-733-75	119	0.423	4.7
2024-05-27	12:00 PM	GD-733-76	111.3	0.341	4.9
2024-06-06	5:00 PM	GD-723-17	110.74	0.352	4.6
2024-06-08	3:00 PM	GD-733-77	110.05	0.536	4.7
2024-06-10	3:00 PM	GD-723-18	110.99	0.531	8.6
2024-06-21	12:00 PM	GD-743-74	112.13	0.407	4.1
2024-07-02	5:00 PM	GD-723-19	111.03	0.444	3
2024-07-02	5:00 PM	GD-723-20	111.03	0.444	3
2024-07-15	12:00 PM	GD-723-21	112.7	0.444	4.2
2024-07-19	9:00 AM	GD-733-78	Equipment fault		
2024-08-01	12:00 PM	GD-713-01	114.56	0.287	6.2
2024-08-03	12:00 PM	GD-713-02	115.73	0.293	6.3
2024-08-19	5:00 PM	GD-713-03	Equipment fault		
2024-08-25	12:00 PM	GD-713-04	121.46	1.815	5.8
2024-09-02	3:00 PM	GD-733-79	111.31	0.426	4.6
2024-09-13	5:00 PM	GD-713-05	97.95	1.88	5.2
2024-09-26	12:00 PM	GD-713-06	111.51	0.363	7.2
2024-09-26	12:00 PM	GD-713-07	111.51	0.363	7.2
2024-11-01	12:00 PM	GD-713-08	Equipment fault		

3 INCIDENTS

There were no incidents at Goodwood in 2024. Areas where previous incidents occurred continued to be monitored to ensure that the measures put in place remained effective and that incidents didn't reoccur.

3.1 Goodwood Basin exfiltration

The exfiltration from the previously unlined portion of the basin which was observed in years prior to the basin repairs completion continued to be monitored as soon as snowmelt started.

Mitigation measures put in place in 2020 at this known exfiltration point in the form of filtration socks, flocculant impregnated geojute, and sediment fences remained in place. However, the toe drain which was installed upstream of the dike and completion of the waterproofing work in the basin continued to greatly reduce the amount of water observed at the exfiltration point. Additionally, a pump was placed downstream of the exfiltration to redirect any water flowing out, back to the basin as needed. This ensured that if any water was to flow, it would not be introduced to the natural environment. This pump stayed in place until the freshet concluded for 2024.

Water visible at the exfiltration point remained clear for the duration of the melt until freezing in fall and did not require pumping or deployment of any additional measures. The water also remained stagnant except when runoff from snowmelt or precipitation would cause it to flow, demonstrating that the water observed there is most likely from surficial saturated ground.

3.2 Management of contact water during spring thaw

Since the work to commission the treatment plant was completed during the snowmelt period and it was expected the plant would be operational, it was not required to install the pumping system which had been used in previous years to convey meltwater to the K1C pit located in NL. The meltwater was therefore accumulated in the basin for treatment by the plant.

All ditches were cleared of snow before the snowmelt period to prevent overflow and ensure that all contact water was properly conveyed to the basin.

No incidents related to meltwater or rainwater management were observed during the year.

3.3 Community Complaints

No complaints from the communities were received regarding the Goodwood project in 2024.

4 SURFACE WATER QUALITY MONITORING

TSMC has monitored surface water quality for the Goodwood project since 2015. Surface water quality results around the Goodwood project generally remain below the MELCC criteria for protection of aquatic life in surface water, except for aluminum, which was shown to be naturally present in the background during the EIA undertaken in 2010 (New Millennium Capital Corp., 2010) and is usually found at the reference area station at Migration Lake (which is unexposed to mining activities). The pH is also usually naturally below applicable criteria in most waterbodies in the surrounding areas.

The locations of the water quality monitoring stations are presented in Figure 1 below. Two stations are monitored: EE-GW, the station representing the exposure area located at the outlet of Fra Lake; and ER-GW, the reference station located at the outlet of Migration Lake.

The monitoring plan includes sampling at both stations 4 times annually for the following parameters:

- Conventionals: alkalinity; dissolved organic carbon (DOC), total organic carbon (TOC), conductivity, chloride, BOD_5 (5-day biological oxygen demand), hardness, TSS, pH, dissolved oxygen (DO), phenols, sulfides, bicarbonates, carbonate, and TDS.
- Ions and nutrients: ammonium nitrate, total kjeldahl nitrogen (TKN), cyanide, fluoride, nitrates, nitrites, reactive silica, sulfides, and sulfates.
- Hydrocarbons: C_{10}-C_{50}.
- Metals and metalloids: Al, Sb, Ag, As, Ba, Bo, Cd, Cr, Co, Cu, Sn, Fe, Mn, Mo, Ni, P, Pb, Se, Th, U, V, Zn, Ca, Cr (VI), Hg, K, Mg, Ra226, Na, T, TI, and Tl.
- Microbiological: total and fecal coliforms.

At least once annually, sampling includes the following trace metals: Al, Sb, Ag, As, Ba, Bo, Cd, Cr, Co, Cu, Sn, Fe, Mn, Mo, Ni, P, Pb, Se, Th, U, V, and Zn.

Sampling for trace metals was carried out at both stations on August 19, 2024, at the same time as the third quarter of sampling.

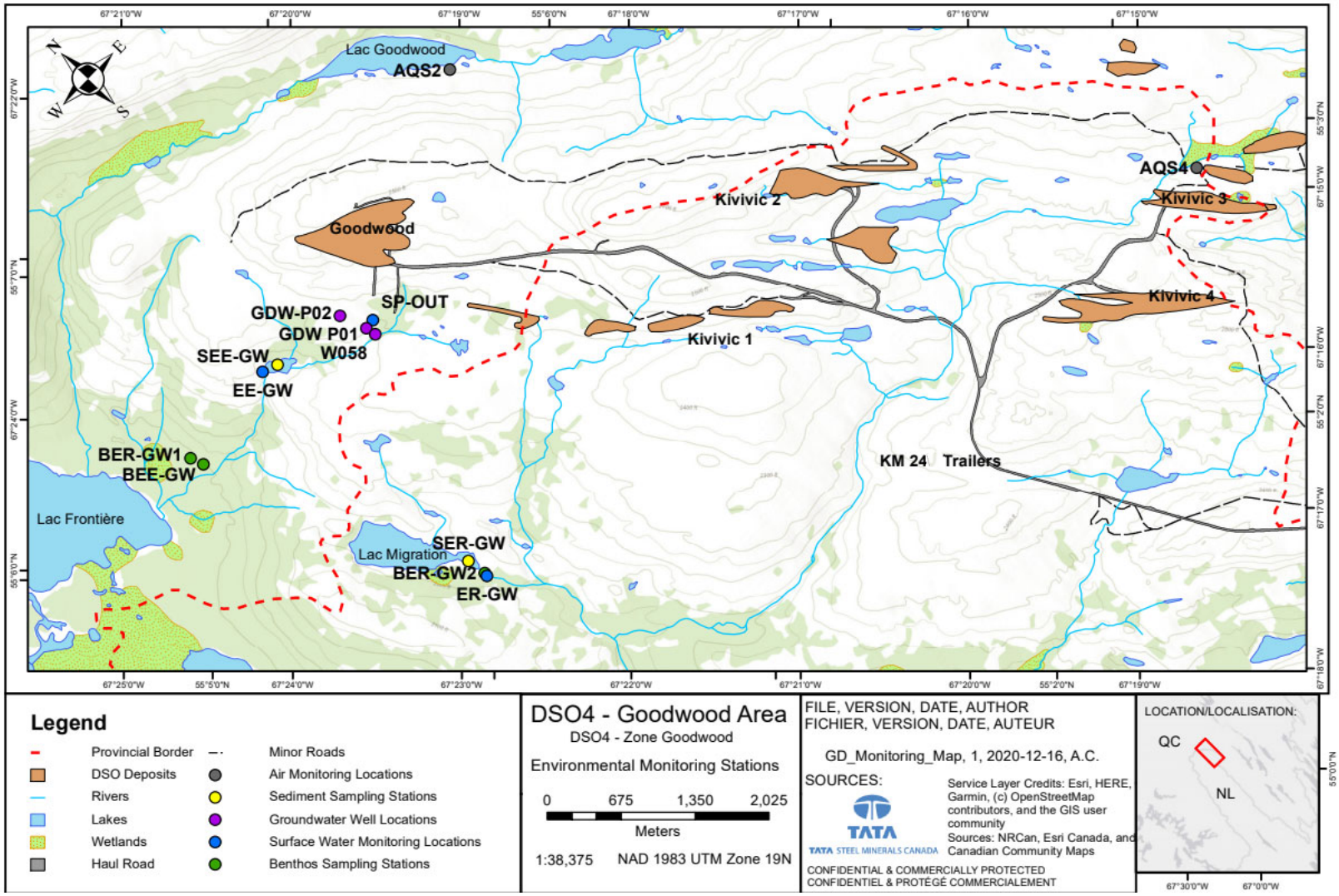

Figure 1 Location of the monitoring stations

4.1 Sampling Schedule

Four sampling events were conducted at least 30 days apart at the exposed and reference stations during the ice-free period for all parameters comprised in the sampling program.

All the parameters for both stations were sampled during the same days. The sampling schedule in 2024 was as follows:

- Quarter 1 – June 11th;
- Quarter 2 – July 16th;
- Quarter 3 – August 19th; and
- Quarter 4 – October 15th.

4.2 2024 Sampling results

Results of the 2024 surface water monitoring campaign did not show any exceedance of the MELCCFP criteria for acute and chronic effects on aquatic life that could be directly attributed to mining activities.

Aluminum concentrations were found to exceed these criteria on two of the samples from the exposed station and on all those from the reference station. It must be noted that since the criterion for aluminum varies in relation to pH, hardness, and DOC and that the hardness concentrations found in the Goodwood area are well below those for which an aluminum criterion was established, the lowest concentrations listed were used (1 µg/L for acute effects; 0.63 µg/L for chronic effects).

It must also be noted that aluminum is naturally present in the area as shown in the EIA completed before the start of the project (New Millennium Capital Corp., 2010).

The highest aluminum concentration detected in 2024 (33 µg/L) was found at the reference station (Migration Lake) on the fourth quarter sample while it was below the detection limit (<10 µg/L) at the exposed station (FRA Lake). In general, during the whole sampling season, higher aluminum concentrations were found in Migration Lake than in Fra Lake, except for the first quarter, when the highest concentration was detected in Fra Lake (32 µg/L).

The highest historical concentration detected in Migration Lake was in 2021 (73 µg/L), while the highest concentration in Fra Lake was found in 2022 (60 µg/L).

These results show that there are important seasonal and annual variations in the aluminum concentrations at both points and that it is frequently higher at the reference point. Therefore, aluminum concentrations found in Fra Lake are most likely from the natural background and not caused by mining operations.

The pH was below the MELCCFP guideline for aquatic life for the first two samples taken at Fra Lake. The pH of Migration Lake was also below the guideline for all samples taken in 2024. Surface water pH is naturally low in the Goodwood area, as well as in surrounding sectors.

Criteria for which exceedances were noted are presented in Table 2 below.

Certificates of analysis for water sampling results obtained in 2024 are presented in Appendix III.

Table 2: MELCCFP criteria exceedance for aquatic life exceedances

Date	pH	Al (µg/L)
MELCC (Acute)	**n.a.**	***1***
MELCC (Chronic)	***6.5 – 9.0***	***0.63***
EE-GW		
May 30	6.43	32
July 04	5.96	13
August 21	7.74	<5
October 3	7.53	<10
ER-GW		
May 30	5.72	13
July 03	5.66	17
August 21	5.58	18
October 3	5.84	33

Orange. Exceeding the CALG (chronic aquatic life guideline, MELCC (2019));

Red. Exceeding the AALG (acute aquatic life guideline, MELCC (2019)) or acute toxicity;

Unknown. The reported detection limit (DL) does not allow a ruling on the toxicity level of the contaminant (DL > CALG)

4.3 Surface water quality monitoring program update

There was no update for this program in 2024. The same program will be carried out again in 2025.

5 SEDIMENT AND BENTHOS QUALITY MONITORING

Sediment sampling and benthos community monitoring were both carried out in 2024.

5.1 Sediment quality

Sediment sampling was carried out at the Fra Lake effluent exposure station (SEE-GW) and the Migration Lake reference station (SER-GW) on September 7, 2024. A small boat was used to reach deep areas of sediment deposition in both lakes, and sediments were collected using a Ponar sampler.

To assess sediment quality, sample results were compared with the threshold values presented in the « *Critères pour l'évaluation de la qualité des sédiments au Québec et cadre d'application: prévention, dragage et restauration* » guidance document.

Review of the analytical results shows that concentrations of metals for which threshold values exist did not vary significantly at either station compared with those of the 2019 sampling campaign. There was therefore no apparent sediment contamination at the exposed station during this period.

The majority of results for these parameters fall within the rare effects concentration range. The lead concentration is below this threshold.

Cadmium is found in the range of the concentration producing an effect at both the reference station and the exposed station, therefore, it is likely a natural occurrence.

Chromium concentrations at the exposed station are also in this range, while those at the reference station are in the lower range; however, values at both stations are very close to the threshold value between these two ranges, so it is also most likely to be a natural occurrence.

Arsenic is in the occasional effects concentration range at the exposed station, whereas it is in the rare effects range at the reference station. However, a slight increase was observed at the reference station, while a very slight decrease occurred at the exposed station. These variations are therefore most likely of natural origin.

The only significant difference between the 2019 and 2024 results is regarding the iron concentration, which has decreased at the exposed station and increased at the reference station. This could be explained by the uneven distribution of iron particles in the sediment. Future sampling campaigns will provide a better understanding of variations in this parameter and will help to determine if a trend is emerging.

C10-C50 analysis could not be performed on the Migration Lake sample, as the quantity of sediment collected was too small. Results for this parameter at the exposed station are below the detection limit.

Table 3 below shows the parameters for which threshold values exist within the above-mentioned document, in addition to those for which EDOs have been calculated, as well as a comparison with the results previously obtained in 2019.

All results and Certificates of Analysis are presented in Appendix IV.

Table 3. Sediment analytical results comparison 2019-2024

Concentration (mg/kg)							
	Threshold Concentrations			EE-GW (Lac Fra)		ER-GW (Lac Migration)	
Substances	REC	TCE	OEC	2019	2024	2019	2024
Arsenic	4.1	5.9	7.6	13	12	4.6	7.1
Cadmium	0.33	0.60	1.7	0.68	0.6	0.83	0.61
Chromium	25	37	57	39	37	32	35
Copper	22	36	63	29	26	33	35
Mercury	0.094	0.17	0.25	0.15	0.11	0.15	0.12
Nickel	ND	ND	47	24	23	32	32
Lead	25	35	52	14	15	13	13
Zinc	80	120	170	110	110	130	140
Aluminum				14000	14000	16000	18000
Barium				61	75	140	110
Iron				93000	70000	33000	59000
Manganese				460	390	160	190
Molybdenum				2.3	2.1	1.9	2.1
Selenium				N.A.	<1.0	N.A.	1.1
C10-C50				N.A.	<100	N.A.	N.A.
Nitrates + Nitrites				<1	<1	<1	<1
Nitrogen Ammonia				<25	<50	32	<50
Sulfur (%g/g)				0.12	0.092	0.2	0.2

Blue	Exceedance of REC (Rare Effects Concentration)
Green	Exceedance of TCE (Threshold Concentration producing an Effect)
Yellow	Exceedance of REC (Occasional Effects Concentration)
ND	Non-determined Value
N.A.	Not analysed

5.2 Benthic community

The monitoring program also includes annual sampling for benthic communities monitoring. The sampling stations are in permanent streams, as close as possible to the sediment sampling stations. Sampling is to be done at the end of summer. The descriptors that are assessed are:

- Total invertebrates' density;
- Richness (Number of taxa);
- Simpson diversity index;
- Evenness (Piélou's index);
- Density of each taxon;
- Relative taxa abundance;
- Absence/presence of taxa; and
- Bray-Curtis coefficient.

The benthic community was monitored at the exposed station downstream of Fra Lake, as well as at the two reference stations at unnamed Stream near the exposed station and at the outlet of Migration Lake from September 4th to September 9th, 2024.

The report on benthic community analysis is presented in Appendix V.

5.3 Sediment and benthos quality monitoring program update

There has been no update to this program in 2024. The same program will be carried out in 2025 for benthic community sampling, and the next sediment sampling event will occur in 2029.

6 MINING EFFLUENT MONITORING

As explained in sections 2.2.2 and 2.2.3, the amount of water accumulated in the basin during the snowmelt and summer was not sufficient to operate the water treatment plant. Therefore, there was no effluent discharged in 2024.

The treatment plant is expected to be operational in the spring of 2025 when the water accumulated in the pond has thawed and the level is sufficient to allow operation of the intake pump.

As soon as effluent from the treatment plant is released into the environment, TSMC will implement the monitoring program developed to comply with the combined requirements of Directive 019, the *Attestation d'Assainissement* and the EDOs included in the Certificate of Authorization, as well as the Metal and Diamond Mining Effluent Regulation (MDMER).

The future monitoring parameters as well as the sampling frequencies are presented in Table 4.

Table 4. Future effluent monitoring parameters and sampling frequencies

Frequency	Parameters
Continuous	pH, flow rate, conductivity
3 x week	TSS
Weekly	As, Cu, Fe, Ni, Pb, Zn, NH_3, Ra226, un-ionized ammonia, temperature
Monthly	Acute toxicity (*O. mykiss* and *D. magna*)
Quarterly	Alkalinity, Cl^-, conductivity, BOD_5, chemical oxygen demand (COD), flow rate, hardness, F^-, C_{10}-C_{50}, dissolved solids, total solids, phenolic substances, SO_4^{2-}, turbidity, NH_3, TKN, NO_{2-}, NO_{3-}, TP, Al, Cd, Ca, Cr, Co, Mg, Mn, Hg, Mo, K, Si, Na, S^{2-}, $S_2O_3^{2-}$, sublethal toxicity (Algae and Fathead minnow or *Ceriodaphnia dubia*)

7 GROUNDWATER MONITORING

Drilling work was done in fall of 2016 to confirm the absence of groundwater downstream of the infrastructure at the lowest topographical point. The surveys carried out in both wells, GDW-P01 and GDW-P02 (drilled at 65 m and 80 m respectively), did not detect any groundwater. Additional drilling work done in 2023 in the vicinity of the pit and waste rock dump did not detect any groundwater either below the final depth of the pit floor.

7.1 Water table monitoring

Well water levels must be monitored twice annually on GDW-P01 and GDW-P02 in spring and in summer. In 2024, monitoring was conducted twice, on June 18 and September 6. Water was not present on either occasion.

7.2 Groundwater sampling

Should water be detected in the wells, a sample will be taken and analyzed for the following parameters:

- C_{10}-C_{50};
- pH, oxidation-reduction potential;
- Dissolved oxygen;
- Conductivity;
- Nitrites/nitrates;
- Total phosphorus;
- Sulfides;
- Total cyanides;
- Dissolved metals (Al, Ag, Ba, B. As, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Hg, Mo, Ni, Pb, Sb, Se, K, Na, Zn);
- Carbonates/bicarbonates;
- Chlorides;
- Sulfates;
- Fluorides;
- Total dissolved solids.

No groundwater was detected in the monitoring wells on both occasions where it was verified.

7.3 Groundwater monitoring program update

There were no updates to the groundwater monitoring program in 2024. The wells will be monitored again in 2025 to verify the presence of a water table and, if required, sampling will be conducted.

8 AIR QUALITY MONITORING

Since 2015, TSMC implemented air quality monitoring for the DSO project. Monitoring was completely operational for the first time in 2018. Locations of the monitoring stations are shown on Figure 2 and Figure 3 below. Stations AQS3, AQS5, AQS7 and AQS8 are not included in the authorisation for Goodwood and have not been sampled in 2024. AQS9 is not included in the authorisation either, but it is nonetheless sampled for NO_2 and dustfall due to its proximity to the main operations conducted in Newfoundland and Labrador.

Summer dustfall and particulates monitoring activities were operational in early June and continued for as long as weather conditions allowed except for AQS4 particulates monitoring which was interrupted early due to vandalism that made the monitoring equipment inoperable. Winter dust deposition was measured at the end of winter with snow cores. NO_2 monitoring was conducted year-round.

Results for the different components of the air quality program are discussed in their respective sections further below.

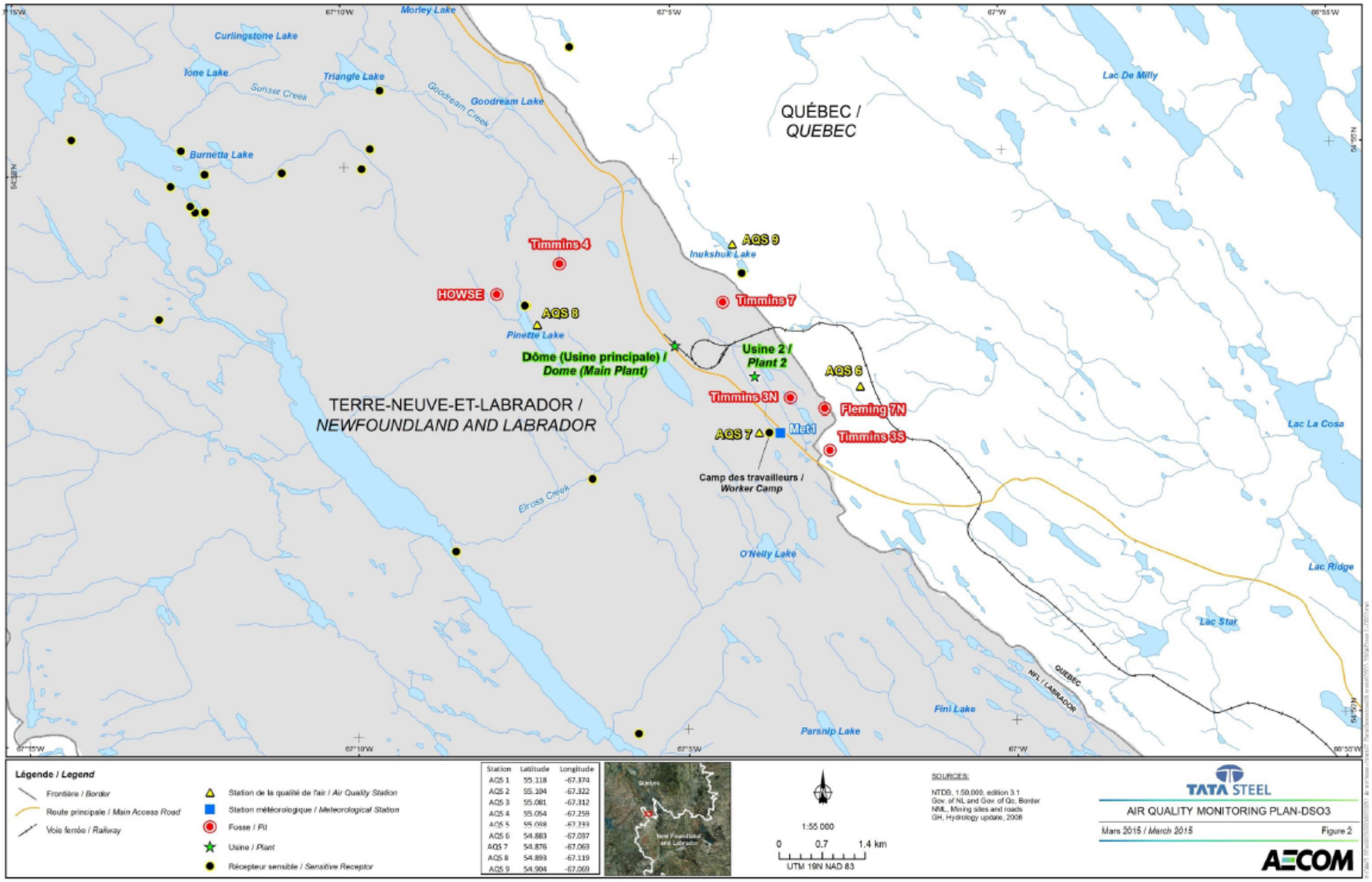

Figure 2. Location of air quality monitoring stations – DSO3

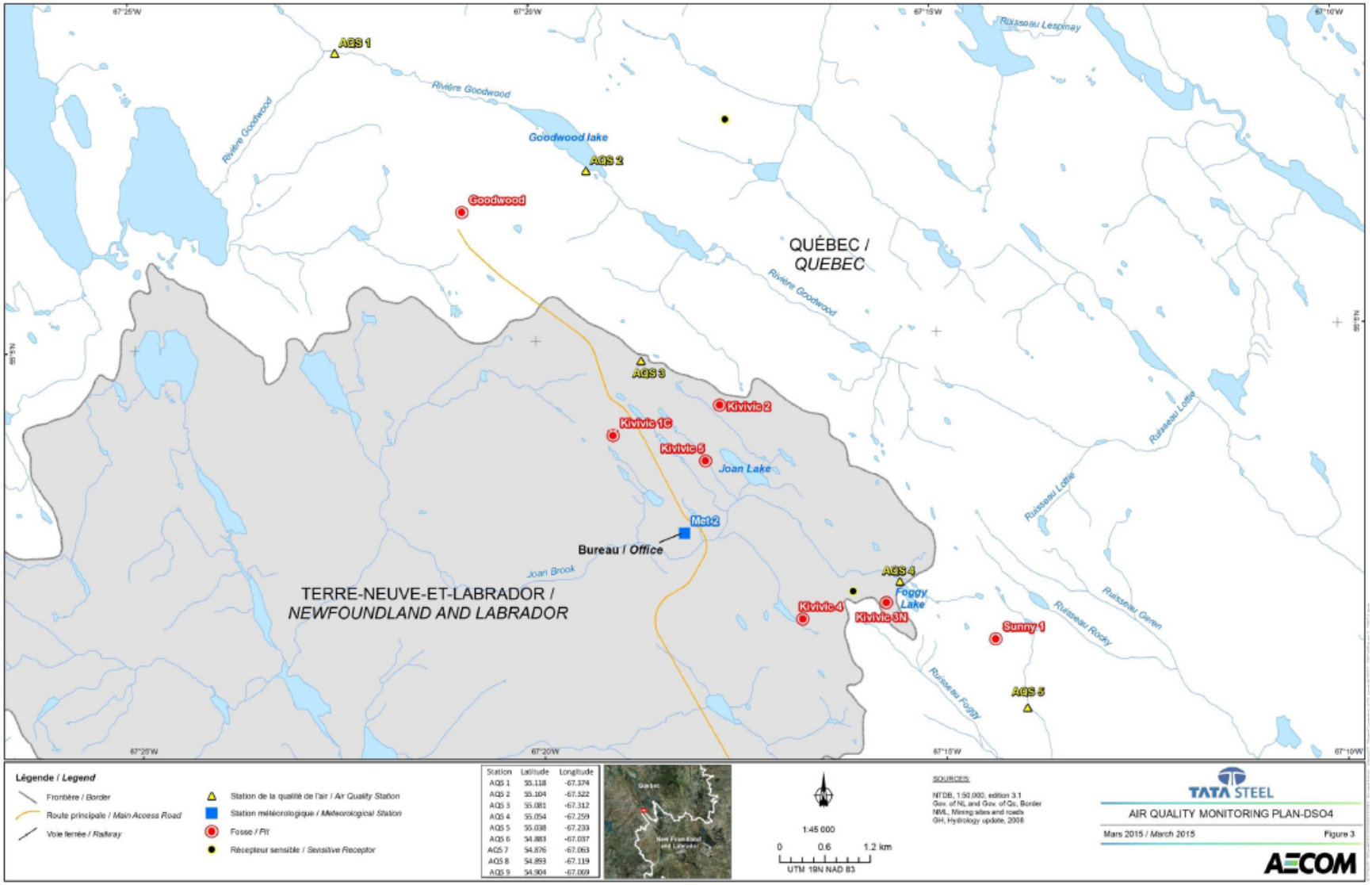

Figure 3. Location of air quality monitoring stations – DSO4

8.1 Sampling

The sampling results for each type of monitoring are presented in the following sections. The certificates of analysis are presented in Appendices VI, VII and VIII.

8.1.1 Nitrogen Dioxyde (NO_2)

Monitoring of NO_2 concentrations using passive samplers took place during every operational month in 2024 at all stations required under the authorisation (AQS2, AQS4 and AQS6), as well as at AQS9 which is monitored due to its proximity to the concentrator located in Newfoundland. Sampling periods were extended beyond the usual approximate 30-day period when access was restricted due to snow conditions in the fall and the spring. Winter access was only possible when weather conditions were acceptable for safety of the technician collecting the samplers.

Results are shown in Table 5 below. No exceedances of provincial standards (QC and NL) were recorded in 2024. The highest concentration was measured at AQS9 station for the period from September 11th, 2024 to October 12th, 2024, with a value of 4.136 µg/m^3 (measured from 2.2 ppb converted by considering that 1 ppb NO_2=1.88 µg/m^3 NO_2), well below the annual provincial standard of 103 µg/m^3. Certificates of analysis are included in Appendix VI.

Table 5. NO_2 results

Station	Start date	End date	NO2 (ppb)	NO2 (ug/m3)
AQS2	2023-12-30	2024-02-15	<0.1	N.D.
	2024-02-15	2024-03-17	DAMAGED	
	2024-03-17	2024-04-27	<0.1	N.D.
	2024-04-27	2024-06-06	0.2	0.376
	2024-06-06	2024-07-08	<0.1	N.D.
	2024-07-08	2024-08-11	0.2	0.376
	2024-08-11	2024-09-11	0.3	0.564
	2024-09-11	2024-10-12	0.6	1.128
	2024-10-12	2024-11-11	<0.1	N.D.
	2024-11-11	2024-12-19	0.1	0.188
AQS4	2023-12-30	2024-02-11	<0.1	N.D.
	2024-02-11	2024-03-15	<0.1	N.D.
	2024-03-15	2024-04-27	<0.1	N.D.
	2024-04-27	2024-06-06	<0.1	N.D.
	2024-06-06	2024-07-08	<0.1	N.D.
	2024-07-08	2024-08-11	0.9	1.692
	2024-08-11	2024-09-11	0.2	0.376
	2024-09-11	2024-10-12	0.7	1.316
	2024-10-12	2024-11-11	0.3	0.564
	2024-11-11	2024-12-19	0.3	0.564
AQS6	2023-12-20	2024-02-09	0.2	0.376
	2024-02-09	2024-03-12	0.4	0.752
	2024-03-12	2024-04-24	<0.1	N.D.
	2024-04-24	2024-06-07	0.2	0.376
	2024-06-07	2024-07-08	<0.1	N.D.
	2024-07-08	2024-08-11	1.0	1.88
	2024-08-11	2024-09-11	0.6	1.128
	2024-09-11	2024-10-12	0.6	1.128
	2024-10-12	2024-11-11	0.8	1.504
	2024-11-11	2024-12-17	0.4	0.752
AQS9	2023-12-21	2024-02-09	0.3	0.564
	2024-02-09	2024-03-13	0.4	0.752
	2024-03-13	2024-04-27	<0.1	N.D.
	2024-04-27	2024-06-07	0.8	1.504
	2024-06-07	2024-07-08	0.2	0.376
	2024-07-08	2024-08-11	0.8	1.504

	2024-08-11	2024-09-11	0.5	0.94
	2024-09-11	2024-10-12	2.2	4.136
	2024-10-12	2024-11-11	0.6	1.128
	2024-11-11	2024-12-18	0.3	0.564

Notes: N/D: Not detected (Value below detection limit); ppb = parts per billion

8.1.2 Dustfall

There is no standard in Québec for dust deposition. The Newfoundland and Labrador standard is 7.0 g/m^2/30 days. The results obtained at the five stations during both summer and winter sampling are all below this standard.

An example of dust deposition calculations and certificates of analysis are presented in Appendix VII.

8.1.2.1 Snow sampling

Snow sampling for the 2024 winter period occurred between April 24th and 27th, 2024. Snow cores were collected, then melted on site, with the resulting water sent out for analysis. Table 6 shows the sampling dates and results for the dust deposited in snow.

The snow cover at AQS6 was insufficient for sampling, consisting only of a thin layer of hard packed ice and snow due to the station being located on a windswept ridge.

For the purpose of calculations, November 15th, 2023 was used as a theoretical date for the start of winter after which snow remained permanently on the ground.

8.1.2.2 Summer dustfall sampling

Dustfall sampling for the summer period started on June 6-7th and continued up to October 12th. Sampling jars were put in place as soon as access to all monitoring stations became possible, and remained in place until conditions did not allow representative sampling due to jar contents freezing. No issues were encountered throughout the dustfall monitoring period.

Table 6 below shows the sampling dates and results for dust deposition in the summer and winter periods.

Table 6. Dust deposition results

Location	Start Date	End Date	Total Dust deposition (g/m²/30d)
AQS1	2024-06-06	2024-07-08	**2.917**
	2024-07-08	2024-08-11	**1.842**
	2024-08-11	2024-09-11	**0.165**
	2024-09-11	2024-10-12	**3.235**
AQS2	2024-06-06	2024-07-08	**0.638**
	2024-07-08	2024-08-11	**1.346**
	2024-08-11	2024-09-11	**0.461**
	2024-09-11	2024-10-12	**0.713**
AQS4	2024-06-06	2024-07-08	**5.060**
	2024-07-08	2024-08-11	**4.980**
	2024-08-11	2024-09-11	**0.395**
	2024-09-11	2024-10-12	**1.536**
AQS6	2024-06-07	2024-07-08	**0.527**
	2024-07-08	2024-08-11	**1.463**
	2024-08-11	2024-09-11	**0.297**
	2024-09-11	2024-10-12	**0.771**
AQS9	2024-06-07	2024-07-08	**0.651**
	2024-07-08	2024-08-11	**0.854**
	2024-08-11	2024-09-11	**0.370**
	2024-09-11	2024-10-12	**1.376**
Winter Period			
AQS1	2023-11-15	2024-04-27	**0.186**
AQS2	2023-11-15	2024-04-27	**0.382**
AQS4	2023-11-15	2024-04-27	**0.681**
AQS6	No Snow		
AQS9	2023-11-15	2024-04-24	**0.189**

8.1.3 PM2.5 and total particulate matter (TPM)

PM2.5 and TPM monitoring started as soon as conditions allowed access to the stations, between June 8th and June 12th. Both TSMC owned PQ-200 units along with four rental units were used to allow installation of two monitors at each station (one for TPM and one for PM2.5).

Due to the late onset of spring, monitoring started in June, almost a month later than in 2023. Monitoring continued until snow conditions prevented access at stations AQS2 and AQS6, on October 18th and October 22nd respectively. Monitoring at AQS4 ceased on September 14th due to the two TSMC owned units installed at this location being vandalized by gunshots. It was not possible to obtain additional rental units to pursue monitoring at AQS4.

Sampling occurred every 12 days at each station for a period of 24 hours, with the PQ200 samplers programmed to sample from midnight to midnight. Following the sampling period, the filter media on which PM2.5 and TPM were collected are sent out for weighing to determine the weight of particles collected. TPM filters are also analyzed for metals. Average atmospheric concentrations of particulates and metals over the sampling period are then calculated from those results.

The rental unit initially installed at AQS2 for TPM sampling was found to be unreliable due to a faulty pump that prevented sampling for the required 24-hour period. A new unit was obtained from the rental company and installed prior to the sampling event on August 7th. TPM results for the samples prior to this date should be considered as invalid or incomplete.

Apart from these initial TPM results at AQS2, most of the results obtained throughout the duration of the monitoring period appear valid, however a few sets of aberrant results where the reported values show PM2.5 concentrations higher than TPM were noted. These are indicated with yellow highlighting in table 7 below. Any results where the PM2.5 concentration is not equal or smaller than that of TPM should be considered invalid.

The threshold values according to the "*Règlement sur l'assainissement de l'atmosphère*" are 30 µg/m3 and 120 µg/m3 for a 24-hour period for PM2.5 and TPM respectively. Exceedances of these values are noted in red in Table 7 below.

Two exceedances of the threshold value for PM2.5 were noted at AQS6 on July 6th and July 18th. However, these exceeding values should both be considered invalid for the following reasons:

- The TPM concentration detected on July 6th is lower than that of PM2.5, therefore the results for this sampling event should be disregarded.
- The concentration of PM2.5 detected on July 18th is an outlier and was likely caused by contamination of the filter media prior to or after sampling. TPM concentration for that sampling period was below the detection limit, and no Iron or other metals associated to mining dust were detected on the TPM filter.

There were no exceedances of the threshold value for TPM noted for the whole duration of the sampling program.

Atmospheric metal concentrations were also compared with the threshold values stated in the "*Règlement sur l'assainissement de l'atmosphère".* There were no exceedances noted throughout the period where monitoring was conducted.

PM2.5 and TPM concentration results for the samples obtained in 2024 are shown in Table 7 below. Certificates of analysis are presented in Appendix VIII along with a calculation example and a table showing the average atmospheric metal concentrations.

Table 7. PM2.5 total particulate matter monitoring results

Station	Date	TPM	PM2.5	Comments
		Concentration (µg/m³)	Concentration (µg/m³)	
AQS2	2024-06-08	20.79	8.32	TPM ran for only 11h:24
	2024-06-20	N.D.	8.32	
	2024-07-02	8.32	29.11	TPM ran for only 2h:45
	2024-07-14	8.32	12.48	TPM ran for only 10h:18
	2024-07-26	16.63	N.D.	TPM unit off when retrieving sample, unknown run time
	2024-08-07	N.D.	N.D.	Defective TPM unit replaced
	2024-08-19	N.D.	N.D.	
	2024-08-31	33.27	N.D.	
	2024-09-12	N.D.	16.63	
	2024-09-24	37.43	8.32	
	2024-10-06	N.D.	8.32	
	2024-10-18	8.32	N.D.	
AQS4	2024-06-10	N.D.	8.32	
	2024-06-22	N.D.	N.D.	
	2024-07-04	33.27	12.48	
	2024-07-16	N.D.	20.79	
	2024-07-28	24.95	N.D.	
	2024-08-09	16.63	N.D.	
	2024-08-21	N.D.	N.D.	
	2024-09-02	N.D.	N.D.	
	2024-09-14	20.79	N.D.	
AQS6	2024-06-12		N.D.	Punctured TPM filter
	2024-06-24	N.D.	N.D.	
	2024-07-06	20.79	33.27	
	2024-07-18	N.D.	261.98	PM2.5 concentration is an outlier
	2024-07-30	29.11	12.48	
	2024-08-11	33.27	16.63	
	2024-08-23	79.01	20.79	
	2024-09-04	N.D.	12.48	
	2024-09-16	12.48	8.32	
	2024-09-26	8.32	N.D.	
	2024-10-10	12.48	8.32	
	2024-10-22	12.48	12.48	

N.D.= Not detected (particulate weight below detection limit), red: Limit value exceeded; Yellow: Aberrant results (TPM inferior to PM2.5)

8.2 Meteorological stations

The meteorological stations were installed in August 2019.

The Kivivic station was installed on a flat and not too rocky area behind the trailers at KM24 (in Newfoundland and Labrador), at a prescribed distance of more than 10X the height of the surrounding buildings. This station remained operational throughout 2024, except for the rain gauge, which was damaged.

A second station had been installed at the camp site located in NL but had to be dismantled at the end of June to allow construction of a new cafeteria. Due to the problems encountered previously with this station (faulty rain gauge and temperature sensor), it has not been reinstalled and will be replaced by a new station in the near future.

9 WASTE ROCK GEOCHEMICAL CHARACTERISTICS MONITORING

The waste rock monitoring program provides for sampling at a minimum frequency of 24 samples per million tons of waste rock for the following parameters and tests:

- Sulfur percentage;
- MABA static test;
- TCLP, SPLP and CTEU-9 lixiviation tests;
- Metals (Ag, As, B, Ba, Cd, Co, Cr, Cu, Fe, Sn, Mn, Hg, Mo, Ni, Pb, Se, U, Zn), analyzed in the rock sample and the lixiviate; and
- total fluorides, nitrites, and nitrates

9.1 2024 Monitoring

A total of 19 samples of waste rock were collected for analyses in 2024, while 615,808 tons of waste rock were extracted from the Goodwood pit during this period. Samples were collected by Geology Department personnel from the various waste rock lithologies encountered within the Goodwood pit during mining operations. Certificates of analysis are presented in Appendix IX.

Analytical results for the metal concentrations in the waste rock samples are to be interpreted according to the requirements under Directive 019 which stipulates that the criteria from the "*Guide d'intervention – Protection des sols et réhabilitation des terrains contaminés*" from the MELCC must be used for the interpretation. Results were compared with the background values for the Labrador Through sub-province.

On the 19 samples analyzed, exceedances of the "A and B" criteria for manganese (which are the same concentration for both criterion) were recorded on 1 sample (TSMC-103998); and the "C" criterion for this same metal was exceeded on 3 samples (TSMC-103997, TSMC-104827 and TSMC-122452). As mentioned in the EIA submitted in 2010 (New Millennium Capital Corp., 2010), this metal is found in the natural background at concentrations exceeding the current applicable criteria in the Goodwood area.

The analytical results for sulfur and for the static tests (MABA) showed that none of the samples exhibited acid generating potential.

Regarding the leachate tests, results from the three analytical methods (TCLP, SPLP and CTEU-9) mostly indicate concentrations below the criteria for resurgence in surface water (Appendix 7 of the *Guide d'intervention*), except for samples TSMC-103997 and TSMC-103998 which exceeded the criterion for Manganese (2300 µg/L) on the TCLP test, with leachate concentrations of 5400 µg/L and 4000 µg/L respectively.

It must also be noted that for two of the leachate tests, the reported detection limit for copper (8.5 µg/L) is above the criterion (7.3 µg/L). It was therefore not possible to determine exceedances for this parameter on those samples where the detection limit was greater than the criterion since analytical results for both samples are below this limit.

Waste rock analytical results from all samples collected since the start of the project are currently under review in collaboration with an external consultant (Ecometrix). This review and associated report will be done in compliance with the "*Guide de caractérisation des résidus miniers et du minerai"* published by the MELCC. It will allow TSMC to determine with certitude whether or not the waste rock can be acid-generating, and if there is a potential for metal lixiviation which has yet to be determined reliably by a third-party analysis. Another part of the external review is a verification of WSP's Technical Note 3 (2016) which will verify and re-asses the findings from the WSP report in the context of the current mining levels and ultimate mining pit limit.

During this review, it was also noted that Mercury results were missing from several samples analyzed in past years. Revised certificates of analysis showing results for this parameter were requested from the consultant laboratory. These additional results confirmed that Mercury remains below the detection limit in leachates from all samples.

The conclusions of this review along with the consultant's final report will be presented in the 2025 annual report as well as in the next updated version of the rehabilitation and closure plan which is scheduled to be submitted in 2026.

9.2 Waste rock monitoring program update

There were no updates to the waste rock monitoring program in 2024. . The monitoring program for waste rock produced by the Goodwood mine operation will continue in 2025 to ensure that certificate conditions are met and to detect any potential changes in the chemical composition of the waste rock.

10 GEOTECHNICAL MONITORING

As per its certificate of operations for Project 2A, TSMC must verify the physical stability of the infrastructure at Goodwood on a regular basis (*Projet 2A – Exploitation Du Gisement Goodwood: Demande De Certificat D'Autorisation pour L'Exploitation Minière en Vertu des Articles 22 et 32 de la LQE, Section 4.*4).

Two types of inspections are done to ensure both short-term and long-term monitoring.

TSMC's Mining personnel carry out inspections on a continual basis during operations at Goodwood; if personnel onsite observe any non-conformities or issues related to the physical stability of the infrastructure at Goodwood, it is reported to managers to ensure corrective action.

The major infrastructure, such as Goodwood basin dike and the waste rock piles, are also inspected by external experts annually to confirm short and long-term stability and to detect any potential issues requiring attention. Typically, at TSMC site, this is done by a geotechnical engineer from WSP who carries out an onsite inspection of the current as-built infrastructures at Goodwood. This inspection was carried out on July 11th, 2024. The complete inspection report is provided in Appendix X.

11 AVIFAUNA SURVEY

In the EIA, TSMC committed to conduct a quinquennial monitoring of avifauna. These monitoring activities aim to determine whether the mining activities have influenced nesting populations.

Baseline surveys were conducted by Groupe Hémisphères in 2008-2009. The first monitoring survey was done in 2017 and a second survey in 2022. The next survey is planned for 2027.

12 CLOSURE PLAN AND REHABILITATION

12.1 Rehabilitation and closure plan

In 2021, an updated version of TSMC's rehabilitation and closure plan was provided to the MERN. Comments from the MERN regarding this updated version of the plan were received on September 26th, 2022; to which TSMC submitted the requested answers and precisions on December 22nd, 2022. The final approval was received on July 31st, 2024.

The next updated version of the rehabilitation and closure plan is scheduled to be produced in 2026.

12.2 Progressive rehabilitation

A hydroseeding trial was conducted on a portion of the sloped exposed ground located around the pad on which the water treatment plant is located.

A mixture of grass species (*Bromus ciliates, Deschampsia caespitosa and Elymus trachycaulus*) which are native to the Schefferville area was used in order to determine its viability in the Goodwood area. This mixture has already shown promising results in trials done at lower elevations along a portion of the Goodwood haul road located in NL. The success of this approach will be determined in Summer 2025 once it becomes possible to evaluate the growth and survival rate of these grasses following the winter period.

12.3 Revegetation studies

In 2022, TSMC had entered an agreement with Université Laval to take part in a research program aiming to test seedlings inoculated with different varieties of mycorrhizal fungi and nitrogen-fixing bacteria to determine their viability for future use on the Goodwood waste rock pile.

As part of this program, soil samples were collected in summer 2022 and 2023, to evaluate soil characteristics and determine required amendments. Black spruce cones along with glandulous birch and green alder seeds were also collected in fall 2022, and again in fall 2023 to obtain seeds from trees adapted to the growing conditions encountered in the Schefferville area. These seeds are currently being grown to produce seedlings inoculated with bacteria and fungi to be tested later on.

In early summer 2025, it is planned that these seedlings will be planted on the waste rock pile in the mined-out Timmins 7 area located in NL. Their growth will be observed and documented through the summer and in the following years. The growing conditions in this area are similar to Goodwood which will help to evaluate the viability of such inoculated seedlings for future rehabilitation operations.

A technical note describing this research project was produced by Prof. Damase Khasa, director of this research project. This note is presented in Appendix XI.

13 COMMUNITIES

13.1 Communities information program

In 2024, TSMC continued to promote the consultation and involvement of First Nations and other partners in its activities. Efforts during the year included an Innu and Naskapi cultural workshop held on the TSMC site and meetings of the Goodwood Environmental and Social Monitoring Committee (29 February and 31 July 2024) on mining operations and environmental issues, and the identification of solutions to improve practices and relations with TSMC's partners.

As mentioned in the *Community Consultation and Engagement Log* presented in Appendix XII, TSMC has frequently shared information, engaged and consulted with Aboriginal communities about its operations and the measures taken to protect people and the environment.

This being the case, communication efforts included extensive communications directed at Aboriginal communities (at videoconferences and face-to-face meetings, written communications), during the meetings of committees[1] made up of representatives mandated by each community to represent them, as well as directly with community leaders and representatives from the environment, education, employment and economic development sectors.

TSMC shares responsibility for disseminating information to community members on mining operations and associated activities with the help of local community leaders and their representatives. These efforts include:

- Multi-faceted announcements made during meetings of the implementation committees for the agreements signed between TSMC and aboriginal partners, including updates on mining activities and measures taken by TSMC to protect communities and workers while continuing to operate.
- Information provided by phone, videoconference or electronically to community and environmental representatives on the progress of TSMC's activities, environmental impact mitigation measures, and TSMC's contact details.
- Environmental and Social Monitoring Committee meetings associated with Goodwood, attended by Naskapi representatives in person, Kativik Regional Government representatives and Makivik Corporation representatives by videoconference, in collaboration with TSMC, were held in February and July 2024. An in-depth presentation on mining activities, as well as on environmental issues raised by members, is provided at each meeting.
- Community Health, Safety and Environment Committee (CHSE) meetings were held in February and May 2024, with the participation and committed contribution of representatives from the Naskapi Nation of Kawawachikamach (NNK), la Nation Innu Matimekush-Lac John (NIMLJ) and Innu of Uashat mak Mani-Utenam (ITUM).
- Numerous other communications between TSMC and Aboriginal representatives and leaders, as detailed in the Community Engagement and Consultation Log. Meetings at TSMC`s corporate office between Chiefs (and Band Council members and experts), TSMC Management, are one example.

[1] Presentations and minutes for Goodwood Environmental and Social Monitoring Committee meetings are prepared in English, since all members understand and express themselves in English. This is not the case for presentations and minutes for meetings of the Community Health, Safety and Environment Committee. They are prepared in both French and English to facilitate reading and comprehension for both French-speaking and English-speaking participants

- In October 2024, TSMC hired a Community Liaison from the community of Kawawachikamach. This person plays a crucial role in strengthening ties and providing visibility to TSMC within the local community. The Liaison's presence full-time in the Schefferville region and connection to the local communities ensures that community members can communicate any issues, questions or activities that require attention and facilitate greater involvement of both TSMC in the community and vice versa.

- In April 2024, TSMC hired a Head of Community Relations, with prior experience with the company and in the Schefferville communities, thus strengthening the reach and effectiveness of the department both internally, externally in the communities, and from a compliance perspective. Furthermore, in November, 2024, TSMC hired a new Community Relations Manager, based in Sept-Îles, QC. This brought the number of team members to three and ensured a much broader geographical presence vis-à-vis Community Relations while also providing the necessary resources for the overall scope of TSMC`s mining activities and Corporate Social Responsibility.

- Dust jars: TSMC Environment team extended its dust fall monitoring program to 2 new locations in Dolly Ridge, in Summer 2024. The collaborative implementation was supported by an environmental representative from Kawawachikamach. This initiative allows for sampling of dust fall in and around the local communities and analysis in a laboratory through TSMC's suppliers. A comparative analysis can then be made of dust fall in and around the mine site.

- TSMC reinstated the publication and distribution in the First Nation communities of a bi-annual newsletter which provides information on TSMC operations, the environment and health and safety. It also provides key contact information with TSMC representatives. The newsletter, published in English and French, is distributed via Canada Post to every post office box in Schefferville/Matimekush and Kawawachikamach. Copies were also distributed to public locations in Uashat, Maliotenam. The KRG and Makivik will be included in upcoming distribution efforts.

Aboriginal community members and Schefferville residents can communicate directly with TSMC through its representatives (Environment and Community Relations departments) by e-mail, telephone, through their community representatives on the Community Health, Safety and Environment Committee, and at any time by visiting the TSMC mine site.

Considered as a means of communication and direct interaction with community members, the Innu newspaper and Nunatsiaq News, community radio broadcasts (in Matimekush and Kawawachikamach) and the local newsletter (a forum for exchanging information with the communities) are all part of the Community Relations Department's 2025 communication and action plan. The annual notice to be submitted to Nunatsiaq News (and another Innu newspaper) by the proponent, will include general information on TSMC's activities, environmental follow-up and a point of contact. A copy of both advertisements, once published, will be provided in next year's annual report (2025). Due to a change in personnel and extended timeframe to hire and train TSMC's new Community Affairs Manager, the preparation and publication of said advertisements were delayed.

13.2 Environmental and Social Monitoring Committee

An Environmental and Social Monitoring Committee was set up in 2015, with representatives from the Kawawachikamach community, the Kativik Regional Government, the Makivik Corporation and TSMC. Two meetings of this Committee were held in 2024 (February and July). Minutes for these meetings are presented in Appendix XIII.

In addition, as part of its overall commitment to community involvement, TSMC created a Community Health, Safety and Environment Committee. This Committee, established in 2013, meets three to four

times per year. It is made up of environmental representatives from the Naskapi Nation of Kawawachikamach, la Nation Innu Matimekush-Lac John, Innu Takuaikan Uashat mak Mani-Utenam, Innu Nation (of Labrador), the NunatuKavut Community Council and TSMC.

Environmental representatives from each community, as well as the TSMC Community Relations team, play a key role, in addition to ensuring a constant flow of information between TSMC and the communities, in receiving comments and complaints from community members relating to TSMC's activities, conveying them to TSMC management and working to find solutions to issues and challenges.

14 CONCLUSIONS RELATED TO 2024 OPERATIONS

In 2024, TSMC continued operations at the Goodwood pit from February to November, and completed the work required for the start-up of the water treatment plant in spring 2024.

Follow-up programs were all carried out in accordance with the requirements of the Certificate of Authorization and the *Attestation d'Assainissement*, including the monitoring of TPM and PM2.5, for which deficiencies were experienced in past years.

Operations at Goodwood were briefly suspended in November 2024 for the winter period and are planned to restart in May 2025 to continue until early winter.

TSMC will be prepared for spring melt in 2025 with the plan to capture all meltwater from the spring thaw and direct it to the Goodwood basin in order to be able to start up the treatment plant shortly afterwards.

Water and air quality monitoring programs that cannot be carried out in winter will resume as soon as seasonal conditions permit and continue through to fall 2025.

15 REFERENCES

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Projet 2A - Exploitation Du Gisement Goodwood : Demande De Certificat D'Autorisation pour L'Exploitation Minière en Vertu des Articles 22 et 32 de la LQE, Section 4.4). (Mars 2018)

APPENDICES

Monitoring Program	Monitoring Type	Location	Date(s) Performed	Comments/ Observation
Surface Water	Grab samples	EE-GW	June 11, July 16, August 19, October 15	
		ER-GW		
Groundwater	Verify presence of groundwater in wells	GDW-P01	June 18, September 6	Wells were dry
		GDW-P02		
Effluent	Grab samples	WTU effluent	n/a	No effluent deposited in 2024
Air Quality (TPM & TPM2.5)	PQ-200 sampling	AQS2	June 8, June 20, July 2, July 14, July 26, August 7, August 19, August 31, September 12, September 24, October 6, October 18	*PQ200 equipment at AQS4 was vandalised, therefore, sampling was stopped.
		AQS4	June 10, June 22, July 4, July 16, July 28, August 9, August 21, September 2, September 14*	
		AQS6	June 12, June 24, July 6, July 18, July 30, August 11, August 23, September 4, September 16, September 28, October 10	
Air Quality (NO2)	Passive sampling	AQS2	**Retrieval date (2024)**	
			2/15, 3/17, 4/27, 6/6, 7/8, 8/11, 9/11, 10/12, 11/11	
		AQS4	2/11, 3/15, 4/27, 6/6, 7/8, 8/11, 9/11, 10/12, 11/11	
		AQS6	2/9, 3/12, 4/24, 6/7, 7/8, 8/11, 9/11, 10/12, 11/11	
		AQS9	2/9, 3/13, 4/27, 6/7, 7/8, 8/11, 9/11, 10/12, 11/11	
Dust Deposition (Summer)	Dust fall jars		**Retrieval date (2024)**	
		AQS1	6/6, 7/8, 8/11, 9/11, 10/12	
		AQS2	6/6, 7/8, 8/11, 9/11, 10/12	
		AQS4	6/6, 7/8, 8/11, 9/11, 10/12	
		AQS6	6/7, 7/8, 8/11, 9/11, 10/12	
		AQS9	6/7, 7/8, 8/11, 9/11, 10/12	
Dust Deposition (Winter)	Snow cores	AQS1, AQS2, AQS4, AQS6	April 24 and 27	

Monitoring Program	Monitoring Type	Location	Date(s) Performed	Comments/ Observation
Waste Rock (Acid Rock Drainage-ARD)	Grab samples	Goodwood waste rock		1 to 5 samples per month depending on waste rock movement. 19 samples collected in 2024
Invertebrates	Composite samples with Surber sampler	BEE (Lac Fra outflow) & BER (Lac Migration outflow)	September 4 to 9	
Sediments	Grab samples with Ponar sampler		September 7	
Site Inspection	Visual inspection	Goodwood infrastructures	Daily	Completed by Mining personnel
Geotechnical Inspection	Inspection by consultant	Goodwood infrastructures	July 11	
Bird Population	Field survey	Goodwood surrounding habitats		Next survey due in 2027

Appendix I. Summary table – monitoring programs

Appendix II. Water treatment plant sampling result

Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your C.O.C. #: 135224

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/05
Report #: R2957628
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C430649
Received: 2024/06/13, 08:00

Sample Matrix: Surface Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Alkalinity (end point 4.5)-waters	1	N/A	2024/06/21	STL SOP-00038	SM 24 2320-B m
Anions in water	1	N/A	2024/06/14	STL SOP-00014	MA.300–Ions 1.3 R6 m
Biochemical Oxygen Demand (5 days) (4)	1	2024/06/13	2024/06/18	STL SOP-00008	MA315-DBO 1.1 R3 m
Pet. Hydrocarbons (C10-C50) in waters	1	2024/06/17	2024/06/21	STL SOP-00173	MA.400–HYD. 1.1 R3 m
Total Cyanide in waters	1	2024/06/13	2024/06/14	STL SOP-00035	MA300-CN 1.2 R4 m
Chemical Oxygen Demand	1	2024/06/19	2024/06/19	STL SOP-00009	MA315-DCO 1.1 R4 m
Fecal Coliforms 10-60 000 CFU/100ml _WW	1	N/A	2024/06/13	QUE SOP-00321	MA.700-Fec.Ec 1.0 R5
Total Coliforms 10-80 000 CFU/100ml _WW	1	N/A	2024/06/13	QUE SOP-00321	MA.700-Col 1.0 R4
Conductivity in waters	1	N/A	2024/06/14	STL SOP-00038	SM 24 2510-B m
Hexavalent Chromium (Cr6+)-waste waters	1	N/A	2024/06/18	STL SOP-00037	MA200-CrHex 1.1 R1 m
Dissolved Organic Carbon (5)	1	2024/06/13	2024/06/14	STL SOP-00243	SM 23 5310-B m
Fluoride in waters	1	N/A	2024/06/14	STL SOP-00038	SM 24 4500-F m
Total Extractable Hg Cold Vapour AF	1	2024/06/26	2024/06/27	STL SOP-00276	EPA 1631,rev. E m
Total Suspended Solids	1	2024/06/19	2024/06/19	STL SOP-00015	MA.104–S.S. 2.0 m
Total Extractable Metals	1	2024/06/17	2024/06/19	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Total Extractible Trace Metals by ICP-MS	1	2024/07/04	2024/07/05	STL SOP-00006	MA203–Mét Tra1.1 R1m
Ammonia Nitrogen in water	1	N/A	2024/06/18	STL SOP-00040	MA.300–N 2.0 R2 m
Nitrates(NO3-), Nitrites(NO2-)-water	1	N/A	2024/06/14	STL SOP-00014	MA.300–Ions 1.3 R6 m
Dissolved Oxygen	1	N/A	2024/06/13	STL SOP-00008	MA.315–DBO 1.1 R3 m
pH in water	1	N/A	2024/06/14	STL SOP-00038	MA.100–pH 1.1 R3 m
Total Phenols by 4-AAP in water	1	2024/06/17	2024/06/18	STL SOP-00033	MA404–I.Phé 2.2 R2 m
Total Phosphorus Low Level by ICP-MS (1)	1	2024/06/14	2024/06/14	QUE SOP-00132	MA.200–Mét. 1.2 R7 m
Sulfides (as S2-)-water	1	2024/06/20	2024/06/20	STL SOP-00273	SM4500-S2 rev.23m.
Sulfides (H2S)	1	N/A	2024/06/21	STL SOP-00273	SM4500-S2 rev.23m.
Total Dissolved Solids	1	2024/06/19	2024/06/19	STL SOP-00050	MA.115–S.D. 1.0 R4 m
Tot. Kjeldahl Nitrogen(calc)-water	1	2024/06/26	2024/06/26	STL SOP-00077	MOE:TOTNUT-E3516v1.3
Total Organic Carbon-water (6)	1	N/A	2024/06/18	STL SOP-00243	SM 23 5310-B m
Radium-226 Low Level-waters (2, 7)	1	N/A	2024/06/25	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your C.O.C. #: 135224

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/05
Report #: R2957628
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C430649
Received: 2024/06/13, 08:00

Sample Matrix: Surface Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Reactive Silica(SiO2) (3)	1	2024/06/18	2024/06/19	ATL SOP 00022	EPA 366.0 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas - Québec, 2690 Avenue Dalton , Quebec, QC, G1P 3S4
(2) This test was performed by Bureau Veritas - Radiological, 6790 Kitimat Rd, Unit 4 , Mississauga, ON, L5N 5L9
(3) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(4) Please note that in the event a biochemical oxygen demand analysis cannot begin within the 48-hours holding time required (for a sample preserved at 4°C), sample will be frozen, unless otherwise specified by a regulation, to maintain it's integrity.
(5) DOC present in the sample should be considered as non-purgeable DOC
(6) TOC present in the sample should be considered as non-purgeable TOC
(7) Radium-226 results have not been corrected for blanks.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your C.O.C. #: 135224

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/05
Report #: R2957628
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C430649
Received: 2024/06/13, 08:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
05 Jul 2024 16:09:29

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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Bureau Veritas Job #: C430649
Report Date: 2024/07/05

TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your P.O. #: 3000001770
Sampler Initials: AE

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		NC4615		
Sampling Date		2024/06/12 08:00		
COC Number		135224		
	Units	**WTU June 12**	**RDL**	**QC Batch**
INORGANICS				
Reactive silica (SiO2) †	mg/L	2.0	0.50	2535128

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your P.O. #: 3000001770
Sampler Initials: AE

HYDROCARBONS BY GCFID (SURFACE WATER)

Bureau Veritas ID		NC4615		
Sampling Date		2024/06/12 08:00		
COC Number		135224		
	Units	**WTU June 12**	**RDL**	**QC Batch**
PETROLEUM HYDROCARBONS				
Petroleum Hydrocarbons (C10-C50)	ug/L	<100	100	2533824
Surrogate Recovery (%)				
1-Chlorooctadecane	%	76	N/A	2533824

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your P.O. #: 3000001770
Sampler Initials: AE

TOTAL EXTRACTABLE METALS (SURFACE WATER)

Bureau Veritas ID		NC4615		
Sampling Date		2024/06/12 08:00		
COC Number		135224		
	Units	WTU June 12	RDL	QC Batch
METALS				
Total Extractable Mercury (Hg) ††	mg/L	<0.000010	0.000010	2537081
Total phosphorous	ug/L	3.4	2.0	2532768
Total Extractable Aluminum (Al)	ug/L	16	10	2533857
Total Extractable Antimony (Sb)	ug/L	<1.0	1.0	2533857
Total Extractable Silver (Ag)	ug/L	<1.0	1.0	2533857
Total Extractable Arsenic (As)	ug/L	<1.0	1.0	2533857
Total Extractable Barium (Ba)	ug/L	4.3	2.0	2533857
Total Extractable Boron (B) †	ug/L	<50	50	2533857
Total Extractable Cadmium (Cd)	ug/L	<0.20	0.20	2533857
Total Extractable Calcium (Ca) †	ug/L	4400	500	2533857
Total Extractable Chromium (Cr)	ug/L	<5.0	5.0	2533857
Total Extractable Cobalt (Co)	ug/L	<1.0	1.0	2533857
Total Extractable Copper (Cu)	ug/L	<1.0	1.0	2533857
Total Extractable Total Hardness (CaCO3) ††	ug/L	17000	1000	2533857
Total Extractable Tin (Sn)	ug/L	<2.0	2.0	2533857
Total Extractable Iron (Fe)	ug/L	360	60	2533857
Total Extractable Magnesium (Mg) †	ug/L	1500	100	2533857
Total Extractable Manganese (Mn)	ug/L	18	1.0	2533857
Total Extractable Mercury (Hg) ††	ug/L	<0.0020	0.0020	2540035
Total Extractable Molybdenum (Mo)	ug/L	<1.0	1.0	2533857
Total Extractable Nickel (Ni)	ug/L	<2.0	2.0	2533857
Total Extractable Lead (Pb)	ug/L	<0.50	0.50	2533857
Total Extractable Potassium (K) †	ug/L	<500	500	2533857
Total Extractable Selenium (Se)	ug/L	<3.0	3.0	2533857
Total Extractable Sodium (Na)	ug/L	520	500	2533857
Total Extractable Thallium (Tl)	ug/L	<2.0	2.0	2533857
Total Extractable Titanium (Ti) ††	ug/L	<10	10	2533857
Total Extractable Uranium (U) ††	ug/L	<1.0	1.0	2533857
Total Extractable Vanadium (V)	ug/L	<2.0	2.0	2533857
Total Extractable Zinc (Zn)	ug/L	<7.0	7.0	2533857

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your P.O. #: 3000001770
Sampler Initials: AE

CONVENTIONAL PARAMETERS (SURFACE WATER)

Bureau Veritas ID		NC4615		
Sampling Date		2024/06/12 08:00		
COC Number		135224		
	Units	WTU June 12	RDL	QC Batch
CONVENTIONALS				
BOD5	mg/L	<5.3	5.3	2532497
COD	mg/L	<5.0	5.0	2534527
Conductivity	mS/cm	0.049	0.0010	2532453
Dissolved organic carbon †	mg/L	0.57	0.20	2532579
Dissolved oxygen †	mg/L	9.4	1.0	2532438
Fluoride (F)	mg/L	<0.10	0.10	2532514
Hexavalent Chromium (Cr 6+)	mg/L	<0.0080	0.0080	2534038
Nitrates (N-NO3-)	mg/L	1.0	0.020	2532469
Nitrites (N-NO2-)	mg/L	<0.020	0.020	2532469
Nitrogen ammonia (N-NH4+ and N-NH3)	mg/L	0.67	0.020	2534229
pH	pH	7.34	N/A	2532454
Phenols-4AAP	mg/L	<0.0020	0.0020	2533851
Sulfides (H2S) †	mg/L	<0.021	0.021	2532182
Sulfides (S2-)	mg/L	<0.020	0.020	2535248
TKN Total Kjeldahl Nitrogen	mg/L	1.1	0.40	2537283
Total Cyanide (CN)	mg/L	<0.0030	0.0030	2532403
Total Organic Carbon	mg/L	0.77	0.20	2533668
Alkalinity Total (as CaCO3) pH 4.5 †	mg/L	4.2	1.0	2532448
Chloride (Cl)	mg/L	0.30	0.050	2532471
Sulfates (SO4)	mg/L	8.4	0.50	2532471
Total Dissolved Solids	mg/L	39	10	2534508
Total suspended solids (TSS)	mg/L	2.0	2.0	2534540

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

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Bureau Veritas Job #: C430649
Report Date: 2024/07/05

TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your P.O. #: 3000001770
Sampler Initials: AE

MICROBIOLOGY (SURFACE WATER)

Bureau Veritas ID		NC4615		
Sampling Date		2024/06/12 08:00		
COC Number		135224		
	Units	**WTU June 12**	**RDL**	**QC Batch**
MICROBIOLGICAL TESTS				
Total coliforms	UFC/100ml	<10	10	2532325
Fecal coliforms	UFC/100ml	<10	10	2532306

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C430649
Report Date: 2024/07/05

TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your P.O. #: 3000001770
Sampler Initials: AE

SUBCONTRACTED ANALYSIS (SURFACE WATER)

Bureau Veritas ID		NC4615		
Sampling Date		2024/06/12 08:00		
COC Number		135224		
	Units	**WTU June 12**	**RDL**	**QC Batch**
RADIONUCLIDE				
Radium-226	Bq/L	<0.005	0.005	2537604

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec WTU
Your P.O. #: 3000001770
Sampler Initials: AE

GENERAL COMMENTS

Radium-226: Cette analyse est accréditée par le MELCCFP.

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2532403	TEX	Spiked Blank	Total Cyanide (CN)	2024/06/14		97	%
2532403	TEX	Method Blank	Total Cyanide (CN)	2024/06/14	<0.0030		mg/L
2532448	KME	Spiked Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/06/14		97	%
2532448	KME	Method Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/06/14	<1.0		mg/L
2532453	KME	Spiked Blank	Conductivity	2024/06/14		102	%
2532453	KME	Method Blank	Conductivity	2024/06/14	<0.0010		mS/cm
2532454	KME	Spiked Blank	pH	2024/06/14		99	%
2532469	LTA	Spiked Blank	Nitrates (N-NO3-)	2024/06/14		92	%
			Nitrites (N-NO2-)	2024/06/14		90	%
2532469	LTA	Method Blank	Nitrates (N-NO3-)	2024/06/14	<0.020		mg/L
			Nitrites (N-NO2-)	2024/06/14	<0.020		mg/L
2532471	LTA	Spiked Blank	Chloride (Cl)	2024/06/14		91	%
			Sulfates (SO4)	2024/06/14		90	%
2532471	LTA	Method Blank	Chloride (Cl)	2024/06/14	<0.050		mg/L
			Sulfates (SO4)	2024/06/14	<0.50		mg/L
2532497	TOO	QC Standard	BOD5	2024/06/18		113	%
2532497	TOO	Method Blank	BOD5	2024/06/18	<2.0		mg/L
2532497	TOO	Method Blank DUP	BOD5	2024/06/18	<2.0		mg/L
2532514	LI	Spiked Blank	Fluoride (F)	2024/06/13		103	%
2532514	LI	Method Blank	Fluoride (F)	2024/06/13	<0.10		mg/L
2532579	BAG	Spiked Blank	Dissolved organic carbon	2024/06/14		102	%
2532579	BAG	Method Blank	Dissolved organic carbon	2024/06/14	<0.20		mg/L
2532768	MAW	Spiked Blank	Total phosphorous	2024/06/14		106	%
2532768	MAW	Method Blank	Total phosphorous	2024/06/14	<2.0		ug/L
2533668	BAG	Spiked Blank	Total Organic Carbon	2024/06/18		102	%
2533668	BAG	Method Blank	Total Organic Carbon	2024/06/18	<0.20		mg/L
2533824	MP9	Spiked Blank	1-Chlorooctadecane	2024/06/21		79	%
			Petroleum Hydrocarbons (C10-C50)	2024/06/21		98	%
2533824	MP9	Spiked Blank DUP	1-Chlorooctadecane	2024/06/21		81	%
			Petroleum Hydrocarbons (C10-C50)	2024/06/21		81	%
2533824	MP9	Method Blank	1-Chlorooctadecane	2024/06/21		68	%
			Petroleum Hydrocarbons (C10-C50)	2024/06/21	<100		ug/L
2533851	GXL	QC Standard	Phenols-4AAP	2024/06/18		93	%
2533851	GXL	Spiked Blank	Phenols-4AAP	2024/06/18		101	%
2533851	GXL	Method Blank	Phenols-4AAP	2024/06/18	<0.0020		mg/L
2533857	ST5	Spiked Blank	Total Extractable Aluminum (Al)	2024/06/18		104	%
			Total Extractable Antimony (Sb)	2024/06/18		105	%
			Total Extractable Silver (Ag)	2024/06/18		100	%
			Total Extractable Arsenic (As)	2024/06/18		101	%
			Total Extractable Barium (Ba)	2024/06/18		97	%
			Total Extractable Boron (B)	2024/06/18		105	%
			Total Extractable Cadmium (Cd)	2024/06/18		100	%
			Total Extractable Calcium (Ca)	2024/06/18		101	%
			Total Extractable Chromium (Cr)	2024/06/18		101	%
			Total Extractable Cobalt (Co)	2024/06/18		100	%
			Total Extractable Copper (Cu)	2024/06/18		97	%
			Total Extractable Tin (Sn)	2024/06/18		105	%
			Total Extractable Iron (Fe)	2024/06/18		104	%
			Total Extractable Magnesium (Mg)	2024/06/18		107	%
			Total Extractable Manganese (Mn)	2024/06/18		102	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Molybdenum (Mo)	2024/06/18		100	%
			Total Extractable Nickel (Ni)	2024/06/18		98	%
			Total Extractable Lead (Pb)	2024/06/18		102	%
			Total Extractable Potassium (K)	2024/06/18		105	%
			Total Extractable Selenium (Se)	2024/06/18		99	%
			Total Extractable Sodium (Na)	2024/06/18		108	%
			Total Extractable Thallium (Tl)	2024/06/18		101	%
			Total Extractable Titanium (Ti)	2024/06/18		103	%
			Total Extractable Uranium (U)	2024/06/18		100	%
			Total Extractable Vanadium (V)	2024/06/18		102	%
			Total Extractable Zinc (Zn)	2024/06/18		96	%
2533857	ST5	Method Blank	Total Extractable Aluminum (Al)	2024/06/18	<10		ug/L
			Total Extractable Antimony (Sb)	2024/06/18	<1.0		ug/L
			Total Extractable Silver (Ag)	2024/06/18	<1.0		ug/L
			Total Extractable Arsenic (As)	2024/06/18	<1.0		ug/L
			Total Extractable Barium (Ba)	2024/06/18	<2.0		ug/L
			Total Extractable Boron (B)	2024/06/18	<50		ug/L
			Total Extractable Cadmium (Cd)	2024/06/18	<0.20		ug/L
			Total Extractable Calcium (Ca)	2024/06/18	<500		ug/L
			Total Extractable Chromium (Cr)	2024/06/18	<5.0		ug/L
			Total Extractable Cobalt (Co)	2024/06/18	<1.0		ug/L
			Total Extractable Copper (Cu)	2024/06/18	<1.0		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/06/18	<1000		ug/L
			Total Extractable Tin (Sn)	2024/06/18	<2.0		ug/L
			Total Extractable Iron (Fe)	2024/06/18	<60		ug/L
			Total Extractable Magnesium (Mg)	2024/06/18	<100		ug/L
			Total Extractable Manganese (Mn)	2024/06/18	<1.0		ug/L
			Total Extractable Molybdenum (Mo)	2024/06/18	<1.0		ug/L
			Total Extractable Nickel (Ni)	2024/06/18	<2.0		ug/L
			Total Extractable Lead (Pb)	2024/06/18	<0.50		ug/L
			Total Extractable Potassium (K)	2024/06/18	<500		ug/L
			Total Extractable Selenium (Se)	2024/06/18	<3.0		ug/L
			Total Extractable Sodium (Na)	2024/06/18	<500		ug/L
			Total Extractable Thallium (Tl)	2024/06/18	<2.0		ug/L
			Total Extractable Titanium (Ti)	2024/06/18	<10		ug/L
			Total Extractable Uranium (U)	2024/06/18	<1.0		ug/L
			Total Extractable Vanadium (V)	2024/06/18	<2.0		ug/L
			Total Extractable Zinc (Zn)	2024/06/18	<7.0		ug/L
2534038	HGU	QC Standard	Hexavalent Chromium (Cr 6+)	2024/06/18		97	%
2534038	HGU	Spiked Blank	Hexavalent Chromium (Cr 6+)	2024/06/18		100	%
2534038	HGU	Method Blank	Hexavalent Chromium (Cr 6+)	2024/06/18	<0.0080		mg/L
2534229	HGU	Spiked Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/06/18		115	%
2534229	HGU	Method Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/06/18	<0.020		mg/L
2534508	SXU	Spiked Blank	Total Dissolved Solids	2024/06/19		101	%
2534508	SXU	Method Blank	Total Dissolved Solids	2024/06/19	<10		mg/L
2534527	DY3	Spiked Blank	COD	2024/06/19		106	%
2534527	DY3	Spiked Blank DUP	COD	2024/06/19		100	%
2534527	DY3	Method Blank	COD	2024/06/19	<5.0		mg/L
2534540	A2B	Spiked Blank	Total suspended solids (TSS)	2024/06/19		95	%
2534540	A2B	Method Blank	Total suspended solids (TSS)	2024/06/19	<2.0		mg/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2535128	EMT	Matrix Spike	Reactive silica (SiO2)	2024/06/19		91	%
2535128	EMT	Spiked Blank	Reactive silica (SiO2)	2024/06/19		94	%
2535128	EMT	Method Blank	Reactive silica (SiO2)	2024/06/19	<0.50		mg/L
2535248	LI	Spiked Blank	Sulfides (S2-)	2024/06/20		100	%
2535248	LI	Method Blank	Sulfides (S2-)	2024/06/20	<0.020		mg/L
2537081	ST5	Spiked Blank	Total Extractable Mercury (Hg)	2024/06/27		92	%
2537081	ST5	Method Blank	Total Extractable Mercury (Hg)	2024/06/27	<0.000010		mg/L
2537283	VPL	Spiked Blank	TKN Total Kjeldahl Nitrogen	2024/06/26		99	%
2537283	VPL	Method Blank	TKN Total Kjeldahl Nitrogen	2024/06/26	<0.40		mg/L
2537604	éFV	Spiked Blank	Radium-226	2024/06/25		87	%
			Radium-226	2024/06/25		87	%
			Radium-226	2024/06/25		87	%
2537604	éFV	Method Blank	Radium-226	2024/06/25	<0.005		Bq/L
			Radium-226	2024/06/25	<0.005		Bq/L
			Radium-226	2024/06/25	<0.005		Bq/L
2540035	ST5	Spiked Blank	Total Extractable Aluminum (Al)	2024/07/05		102	%
			Total Extractable Antimony (Sb)	2024/07/05		105	%
			Total Extractable Silver (Ag)	2024/07/05		98	%
			Total Extractable Arsenic (As)	2024/07/05		96	%
			Total Extractable Barium (Ba)	2024/07/05		98	%
			Total Extractable Boron (B)	2024/07/05		83	%
			Total Extractable Cadmium (Cd)	2024/07/05		98	%
			Total Extractable Calcium (Ca)	2024/07/05		89	%
			Total Extractable Chromium (Cr)	2024/07/05		91	%
			Total Extractable Cobalt (Co)	2024/07/05		98	%
			Total Extractable Copper (Cu)	2024/07/05		96	%
			Total Extractable Tin (Sn)	2024/07/05		107	%
			Total Extractable Iron (Fe)	2024/07/05		95	%
			Total Extractable Magnesium (Mg)	2024/07/05		84	%
			Total Extractable Manganese (Mn)	2024/07/05		90	%
			Total Extractable Mercury (Hg)	2024/07/05		95	%
			Total Extractable Molybdenum (Mo)	2024/07/05		92	%
			Total Extractable Nickel (Ni)	2024/07/05		92	%
			Total Extractable Lead (Pb)	2024/07/05		100	%
			Total Extractable Potassium (K)	2024/07/05		90	%
			Total Extractable Selenium (Se)	2024/07/05		94	%
			Total Extractable Sodium (Na)	2024/07/05		91	%
			Total Extractable Thallium (Tl)	2024/07/05		97	%
			Total Extractable Titanium (Ti)	2024/07/05		89	%
			Total Extractable Uranium (U)	2024/07/05		91	%
			Total Extractable Vanadium (V)	2024/07/05		95	%
			Total Extractable Zinc (Zn)	2024/07/05		93	%
2540035	ST5	Method Blank	Total Extractable Aluminum (Al)	2024/07/05	<5.0		ug/L
			Total Extractable Antimony (Sb)	2024/07/05	<0.0070		ug/L
			Total Extractable Silver (Ag)	2024/07/05	<0.0030		ug/L
			Total Extractable Arsenic (As)	2024/07/05	<0.080		ug/L
			Total Extractable Barium (Ba)	2024/07/05	<0.030		ug/L
			Total Extractable Boron (B)	2024/07/05	<0.30		ug/L
			Total Extractable Cadmium (Cd)	2024/07/05	<0.0060		ug/L
			Total Extractable Calcium (Ca)	2024/07/05	<20		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Chromium (Cr)	2024/07/05	<0.040		ug/L
			Total Extractable Cobalt (Co)	2024/07/05	<0.0080		ug/L
			Total Extractable Copper (Cu)	2024/07/05	<0.050		ug/L
			Total Extractable Tin (Sn)	2024/07/05	<0.050		ug/L
			Total Extractable Iron (Fe)	2024/07/05	<0.50		ug/L
			Total Extractable Magnesium (Mg)	2024/07/05	<10		ug/L
			Total Extractable Manganese (Mn)	2024/07/05	<0.030		ug/L
			Total Extractable Mercury (Hg)	2024/07/05	<0.0020		ug/L
			Total Extractable Molybdenum (Mo)	2024/07/05	<0.010		ug/L
			Total Extractable Nickel (Ni)	2024/07/05	<0.030		ug/L
			Total Extractable Lead (Pb)	2024/07/05	<0.010		ug/L
			Total Extractable Potassium (K)	2024/07/05	<10		ug/L
			Total Extractable Selenium (Se)	2024/07/05	<0.050		ug/L
			Total Extractable Sodium (Na)	2024/07/05	<10		ug/L
			Total Extractable Thallium (Tl)	2024/07/05	<0.010		ug/L
			Total Extractable Titanium (Ti)	2024/07/05	<0.40		ug/L
			Total Extractable Uranium (U)	2024/07/05	<0.0010		ug/L
			Total Extractable Vanadium (V)	2024/07/05	<0.050		ug/L
			Total Extractable Zinc (Zn)	2024/07/05	<0.50		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/07/05	<40		ug/L

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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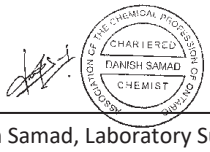
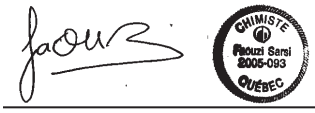
VALIDATION SIGNATURE PAGE

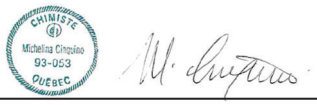
The analytical data and all QC contained in this report were reviewed and validated by:



Danish Samad, Laboratory Supervisor



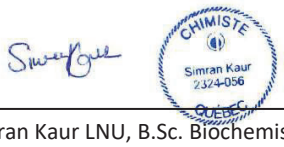
Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst



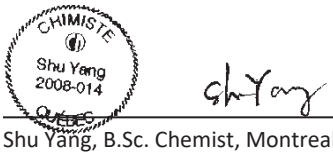
Michelina Cinquino, Analyst II

Prachi Nandanwar, Microbiologist,Montreal, Scientific Specialist

Noureddine Chafiaai, B.Sc., Chemist, Montreal, Team leader



Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2



Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

Zineb El Ouali
Membre OCQ#2021-051

Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Appendix III. Certificates of Analysis – Surface water

Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 135114

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/05
Report #: R2957611
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C430267
Received: 2024/06/12, 10:00

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Alkalinity (end point 4.5)-waters	2	N/A	2024/06/12	STL SOP-00038	SM 24 2320-B m
Anions in water	2	N/A	2024/06/13	STL SOP-00014	MA.300–Ions 1.3 R6 m
Biochemical Oxygen Demand (5 days) (4)	2	2024/06/13	2024/06/18	STL SOP-00008	MA315-DBO 1.1 R3 m
Pet. Hydrocarbons (C10-C50) in waters	2	2024/06/17	2024/06/19	STL SOP-00173	MA.400–HYD. 1.1 R3 m
Total Cyanide in waters	2	2024/06/12	2024/06/13	STL SOP-00035	MA300-CN 1.2 R4 m
Chemical Oxygen Demand	1	2024/06/17	2024/06/17	STL SOP-00009	MA315-DCO 1.1 R4 m
Chemical Oxygen Demand	1	2024/06/18	2024/06/18	STL SOP-00009	MA315-DCO 1.1 R4 m
Fecal Coliforms 10-60 000 CFU/100ml _WW	2	N/A	2024/06/12	QUE SOP-00321	MA.700-Fec.Ec 1.0 R5
Total Coliforms 10-80 000 CFU/100ml _WW	2	N/A	2024/06/12	QUE SOP-00321	MA.700-Col 1.0 R4
Conductivity in waters	2	N/A	2024/06/13	STL SOP-00038	SM 24 2510-B m
Hexavalent Chromium (Cr6+)-waste waters	2	N/A	2024/06/17	STL SOP-00037	MA200-CrHex 1.1 R1 m
Dissolved Organic Carbon (5)	2	2024/06/13	2024/06/14	STL SOP-00243	SM 23 5310-B m
Fluoride in waters	2	N/A	2024/06/13	STL SOP-00038	SM 24 4500-F m
Total Extractable Hg Cold Vapour AF	2	2024/06/26	2024/06/27	STL SOP-00276	EPA 1631,rev. E m
Total Suspended Solids	2	2024/06/17	2024/06/17	STL SOP-00015	MA.104–S.S. 2.0 m
Total Extractable Metals	2	2024/06/17	2024/06/18	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Total Extractible Trace Metals by ICP-MS	2	2024/07/04	2024/07/05	STL SOP-00006	MA203–Mét Tra1.1 R1m
Ammonia Nitrogen in water	2	N/A	2024/06/17	STL SOP-00040	MA.300–N 2.0 R2 m
Nitrates(NO3-), Nitrites(NO2-)-water	2	N/A	2024/06/13	STL SOP-00014	MA.300–Ions 1.3 R6 m
Dissolved Oxygen	2	N/A	2024/06/12	STL SOP-00008	MA.315–DBO 1.1 R3 m
pH in water	2	N/A	2024/06/13	STL SOP-00038	MA.100–pH 1.1 R3 m
Total Phenols by 4-AAP in water	2	2024/06/17	2024/06/17	STL SOP-00033	MA404–I.Phé 2.2 R2 m
pH (site)- waters	2	N/A	2024/06/12		Test Kit
Total Phosphorus Low Level by ICP-MS (1)	2	2024/06/14	2024/06/14	QUE SOP-00132	MA.200–Mét. 1.2 R7 m
Sulfides (as S2-)-water	2	2024/06/19	2024/06/20	STL SOP-00273	SM4500-S2 rev.23m.
Sulfides (H2S)	2	N/A	2024/06/20	STL SOP-00273	SM4500-S2 rev.23m.
Total Dissolved Solids	2	2024/06/15	2024/06/15	STL SOP-00050	MA.115–S.D. 1.0 R4 m
Temperature (site)	2	N/A	2024/06/12		Thermometer
Tot. Kjeldahl Nitrogen(calc)-water	2	2024/06/26	2024/06/26	STL SOP-00077	MOE:TOTNUT-E3516v1.3
Total Organic Carbon-water (6)	2	N/A	2024/06/17	STL SOP-00243	SM 23 5310-B m

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 135114

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/05
Report #: R2957611
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C430267
Received: 2024/06/12, 10:00

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Radium-226 Low Level-waters (2, 7)	2	N/A	2024/06/28	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Reactive Silica(SiO2) (3)	2	2024/06/18	2024/06/19	ATL SOP 00022	EPA 366.0 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas - Québec, 2690 Avenue Dalton , Quebec, QC, G1P 3S4
(2) This test was performed by Bureau Veritas - Radiological, 6790 Kitimat Rd, Unit 4 , Mississauga, ON, L5N 5L9
(3) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(4) Please note that in the event a biochemical oxygen demand analysis cannot begin within the 48-hours holding time required (for a sample preserved at 4°C), sample will be frozen, unless otherwise specified by a regulation, to maintain it's integrity.
(5) DOC present in the sample should be considered as non-purgeable DOC
(6) TOC present in the sample should be considered as non-purgeable TOC
(7) Radium-226 results have not been corrected for blanks.

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 135114

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/05
Report #: R2957611
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C430267
Received: 2024/06/12, 10:00

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Bureau Veritas
05 Jul 2024 15:44:55

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

Bureau Veritas Job #: C430267
Report Date: 2024/07/05

TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770
Sampler Initials: NS

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		NC3111	NC3112		
Sampling Date		2024/06/11 10:00	2024/06/11 08:40		
COC Number		135114	135114		
	Units	DSO4-EE-GW-Q1-2024	DSO4-ER-GW-Q1-2024	RDL	QC Batch
INORGANICS					
Reactive silica (SiO2) †	mg/L	1.5	<0.50	0.50	2535128

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770
Sampler Initials: NS

HYDROCARBONS BY GCFID (SURFACE WATER)

Bureau Veritas ID		NC3111	NC3112		
Sampling Date		2024/06/11 10:00	2024/06/11 08:40		
COC Number		135114	135114		
	Units	**DSO4-EE-GW-Q1-2024**	**DSO4-ER-GW-Q1-2024**	**RDL**	**QC Batch**
PETROLEUM HYDROCARBONS					
Petroleum Hydrocarbons (C10-C50)	ug/L	<100	<100	100	2533653
Surrogate Recovery (%)					
1-Chlorooctadecane	%	115	82	N/A	2533653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770
Sampler Initials: NS

TOTAL EXTRACTABLE METALS (SURFACE WATER)

Bureau Veritas ID		NC3111	NC3112	NC3112		
Sampling Date		2024/06/11 10:00	2024/06/11 08:40	2024/06/11 08:40		
COC Number		135114	135114	135114		
	Units	DSO4-EE-GW-Q1-2024	DSO4-ER-GW-Q1-2024	DSO4-ER-GW-Q1-2024 Lab-Dup	RDL	QC Batch
METALS						
Total Extractable Mercury (Hg) ††	mg/L	<0.000010	<0.000010	N/A	0.000010	2537081
Total phosphorous	ug/L	5.9	6.1	8.2	2.0	2532768
Total Extractable Aluminum (Al)	ug/L	32	13	N/A	10	2533776
Total Extractable Antimony (Sb)	ug/L	<1.0	<1.0	N/A	1.0	2533776
Total Extractable Silver (Ag)	ug/L	<1.0	<1.0	N/A	1.0	2533776
Total Extractable Arsenic (As)	ug/L	<1.0	<1.0	N/A	1.0	2533776
Total Extractable Barium (Ba)	ug/L	<2.0	<2.0	N/A	2.0	2533776
Total Extractable Boron (B) †	ug/L	<50	<50	N/A	50	2533776
Total Extractable Cadmium (Cd)	ug/L	<0.20	<0.20	N/A	0.20	2533776
Total Extractable Calcium (Ca) †	ug/L	<500	<500	N/A	500	2533776
Total Extractable Chromium (Cr)	ug/L	<5.0	<5.0	N/A	5.0	2533776
Total Extractable Cobalt (Co)	ug/L	<1.0	<1.0	N/A	1.0	2533776
Total Extractable Copper (Cu)	ug/L	<1.0	<1.0	N/A	1.0	2533776
Total Extractable Total Hardness (CaCO3) ††	ug/L	<1000	<1000	N/A	1000	2533776
Total Extractable Tin (Sn)	ug/L	<2.0	<2.0	N/A	2.0	2533776
Total Extractable Iron (Fe)	ug/L	<60	<60	N/A	60	2533776
Total Extractable Magnesium (Mg) †	ug/L	130	<100	N/A	100	2533776
Total Extractable Manganese (Mn)	ug/L	29	35	N/A	1.0	2533776
Total Extractable Mercury (Hg) ††	ug/L	<0.0020	<0.0020	N/A	0.0020	2539550
Total Extractable Molybdenum (Mo)	ug/L	<1.0	<1.0	N/A	1.0	2533776
Total Extractable Nickel (Ni)	ug/L	<2.0	<2.0	N/A	2.0	2533776
Total Extractable Lead (Pb)	ug/L	<0.50	<0.50	N/A	0.50	2533776
Total Extractable Potassium (K) †	ug/L	<500	<500	N/A	500	2533776
Total Extractable Selenium (Se)	ug/L	<3.0	<3.0	N/A	3.0	2533776
Total Extractable Sodium (Na)	ug/L	<500	<500	N/A	500	2533776
Total Extractable Thallium (Tl)	ug/L	<2.0	<2.0	N/A	2.0	2533776
Total Extractable Titanium (Ti) ††	ug/L	<10	<10	N/A	10	2533776
Total Extractable Uranium (U) ††	ug/L	<1.0	<1.0	N/A	1.0	2533776
Total Extractable Vanadium (V)	ug/L	<2.0	<2.0	N/A	2.0	2533776
Total Extractable Zinc (Zn)	ug/L	<7.0	<7.0	N/A	7.0	2533776

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
N/A = Not Applicable
† Parameter is not accredited

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CONVENTIONAL PARAMETERS (SURFACE WATER)

Bureau Veritas ID		NC3111	NC3111		NC3112		
Sampling Date		2024/06/11 10:00	2024/06/11 10:00		2024/06/11 08:40		
COC Number		135114	135114		135114		
	Units	**DSO4-EE-GW-Q1-2024**	**DSO4-EE-GW-Q1-2024 Lab-Dup**	**QC Batch**	**DSO4-ER-GW-Q1-2024**	**RDL**	**QC Batch**
CONVENTIONALS							
BOD5	mg/L	<4.0	N/A	2532143	<4.0	4.0	2532142
COD	mg/L	<5.0	N/A	2533918	<5.0	5.0	2533619
Conductivity	mS/cm	0.0014	N/A	2531923	<0.0010	0.0010	2531923
Dissolved organic carbon †	mg/L	1.8	N/A	2532346	1.3	0.20	2532346
Dissolved oxygen †	mg/L	9.2	N/A	2531904	9.5	1.0	2531904
Fluoride (F)	mg/L	<0.10	<0.10	2531311	<0.10	0.10	2531311
Hexavalent Chromium (Cr 6+)	mg/L	<0.0080	N/A	2533547	<0.0080	0.0080	2533547
Nitrates (N-NO3-)	mg/L	<0.020	N/A	2532019	<0.020	0.020	2532019
Nitrites (N-NO2-)	mg/L	<0.020	N/A	2532019	<0.020	0.020	2532019
Nitrogen ammonia (N-NH4+ and N-NH3)	mg/L	0.11	N/A	2533500	0.20	0.020	2533500
pH	pH	6.43	N/A	2532083	5.72	N/A	2532083
pH (on-site) †	pH	5.89	N/A	ONSITE	7.14	N/A	ONSITE
Phenols-4AAP	mg/L	<0.0020	<0.0020	2533815	<0.0020	0.0020	2533815
Sulfides (H2S) †	mg/L	<0.021	N/A	2531716	<0.021	0.021	2531716
Sulfides (S2-)	mg/L	<0.020	N/A	2534906	<0.020	0.020	2534906
TKN Total Kjeldahl Nitrogen	mg/L	<0.40	N/A	2537265	<0.40	0.40	2537265
Total Cyanide (CN)	mg/L	<0.0030	N/A	2531903	<0.0030	0.0030	2531903
Total Organic Carbon	mg/L	2.2	N/A	2533647	1.7	0.20	2533647
Alkalinity Total (as CaCO3) pH 4.5 †	mg/L	1.0	N/A	2531920	<1.0	1.0	2531920
Chloride (Cl)	mg/L	0.066	N/A	2532021	0.060	0.050	2532021
Sulfates (SO4)	mg/L	<0.50	N/A	2532021	<0.50	0.50	2532021
Total Dissolved Solids	mg/L	23	N/A	2533291	<10	10	2533291
Total suspended solids (TSS)	mg/L	<2.0	N/A	2533855	<2.0	2.0	2533855
On-site Measurements							
Temperature (°C) †	Celsius	15.70	N/A	ONSITE	11.30	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770
Sampler Initials: NS

CONVENTIONAL PARAMETERS (SURFACE WATER)

Bureau Veritas ID		NC3112		
Sampling Date		2024/06/11 08:40		
COC Number		135114		
	Units	**DSO4-ER-GW-Q1-2024 Lab-Dup**	**RDL**	**QC Batch**
CONVENTIONALS				
Sulfides (S2-)	mg/L	<0.020	0.020	2534906

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770
Sampler Initials: NS

MICROBIOLOGY (SURFACE WATER)

Bureau Veritas ID		NC3111		NC3112		
Sampling Date		2024/06/11 10:00		2024/06/11 08:40		
COC Number		135114		135114		
	Units	**DSO4-EE-GW-Q1-2024**	**RDL**	**DSO4-ER-GW-Q1-2024**	**RDL**	**QC Batch**
MICROBIOLGICAL TESTS						
Total coliforms	UFC/100ml	540	10	1800	100	2531937
Fecal coliforms	UFC/100ml	<10	10	<10	10	2531883

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770
Sampler Initials: NS

SUBCONTRACTED ANALYSIS (SURFACE WATER)

Bureau Veritas ID		NC3111	NC3111	NC3112		
Sampling Date		2024/06/11 10:00	2024/06/11 10:00	2024/06/11 08:40		
COC Number		135114	135114	135114		
	Units	**DSO4-EE-GW-Q1-2024**	**DSO4-EE-GW-Q1-2024 Lab-Dup**	**DSO4-ER-GW-Q1-2024**	**RDL**	**QC Batch**
RADIONUCLIDE						
Radium-226	Bq/L	<0.005	<0.005	<0.005	0.005	2539185

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Please note that the test pH (site)- waters was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

MICROBIOLOGY (SURFACE WATER)

The detection limits indicated are multiplied by the dilution factors used for the analysis of the samples. Radium-226: Cette analyse est accréditée par le MELCCFP.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2531311	LTA	Spiked Blank	Fluoride (F)	2024/06/13		90	%
2531311	LTA	Method Blank	Fluoride (F)	2024/06/13	<0.10		mg/L
2531903	TEX	Spiked Blank	Total Cyanide (CN)	2024/06/13		94	%
2531903	TEX	Method Blank	Total Cyanide (CN)	2024/06/13	<0.0030		mg/L
2531920	KME	Spiked Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/06/13		100	%
2531920	KME	Method Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/06/13	<1.0		mg/L
2531923	KME	Spiked Blank	Conductivity	2024/06/13		104	%
2531923	KME	Method Blank	Conductivity	2024/06/13	<0.0010		mS/cm
2532019	LTA	Spiked Blank	Nitrates (N-NO3-)	2024/06/13		93	%
			Nitrites (N-NO2-)	2024/06/13		90	%
2532019	LTA	Method Blank	Nitrates (N-NO3-)	2024/06/13	<0.020		mg/L
			Nitrites (N-NO2-)	2024/06/13	<0.020		mg/L
2532021	LTA	Spiked Blank	Chloride (Cl)	2024/06/13		91	%
			Sulfates (SO4)	2024/06/13		90	%
2532021	LTA	Method Blank	Chloride (Cl)	2024/06/13	<0.050		mg/L
			Sulfates (SO4)	2024/06/13	<0.50		mg/L
2532083	KME	Spiked Blank	pH	2024/06/13		102	%
2532142	TOO	QC Standard	BOD5	2024/06/18		110	%
2532142	TOO	Method Blank	BOD5	2024/06/18	<2.0		mg/L
2532142	TOO	Method Blank DUP	BOD5	2024/06/18	<2.0		mg/L
2532143	TOO	QC Standard	BOD5	2024/06/18		112	%
2532143	TOO	Method Blank	BOD5	2024/06/18	<2.0		mg/L
2532143	TOO	Method Blank DUP	BOD5	2024/06/18	<2.0		mg/L
2532346	BAG	Spiked Blank	Dissolved organic carbon	2024/06/14		101	%
2532346	BAG	Method Blank	Dissolved organic carbon	2024/06/14	<0.20		mg/L
2532768	MAW	Spiked Blank	Total phosphorous	2024/06/14		106	%
2532768	MAW	Method Blank	Total phosphorous	2024/06/14	<2.0		ug/L
2533291	JCT	Spiked Blank	Total Dissolved Solids	2024/06/15		99	%
2533291	JCT	Method Blank	Total Dissolved Solids	2024/06/15	<10		mg/L
2533500	SD9	QC Standard	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/06/17		111	%
2533500	SD9	Spiked Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/06/17		108	%
2533500	SD9	Method Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/06/17	<0.020		mg/L
2533547	HGU	QC Standard	Hexavalent Chromium (Cr 6+)	2024/06/17		97	%
2533547	HGU	Spiked Blank	Hexavalent Chromium (Cr 6+)	2024/06/17		99	%
2533547	HGU	Method Blank	Hexavalent Chromium (Cr 6+)	2024/06/17	<0.0080		mg/L
2533619	DY3	Spiked Blank	COD	2024/06/17		100	%
2533619	DY3	Spiked Blank DUP	COD	2024/06/17		94	%
2533619	DY3	Method Blank	COD	2024/06/17	<5.0		mg/L
2533647	BAG	Spiked Blank	Total Organic Carbon	2024/06/17		104	%
2533647	BAG	Method Blank	Total Organic Carbon	2024/06/17	<0.20		mg/L
2533653	SHD	Spiked Blank	1-Chlorooctadecane	2024/06/19		100	%
			Petroleum Hydrocarbons (C10-C50)	2024/06/19		85	%
2533653	SHD	Spiked Blank DUP	1-Chlorooctadecane	2024/06/19		92	%
			Petroleum Hydrocarbons (C10-C50)	2024/06/19		79	%
2533653	SHD	Method Blank	1-Chlorooctadecane	2024/06/19		84	%
			Petroleum Hydrocarbons (C10-C50)	2024/06/19	<100		ug/L
2533776	ST5	Spiked Blank	Total Extractable Aluminum (Al)	2024/06/18		105	%
			Total Extractable Antimony (Sb)	2024/06/18		105	%
			Total Extractable Silver (Ag)	2024/06/18		101	%
			Total Extractable Arsenic (As)	2024/06/18		99	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Barium (Ba)	2024/06/18		97	%
			Total Extractable Boron (B)	2024/06/18		103	%
			Total Extractable Cadmium (Cd)	2024/06/18		98	%
			Total Extractable Calcium (Ca)	2024/06/18		102	%
			Total Extractable Chromium (Cr)	2024/06/18		103	%
			Total Extractable Cobalt (Co)	2024/06/18		100	%
			Total Extractable Copper (Cu)	2024/06/18		97	%
			Total Extractable Tin (Sn)	2024/06/18		105	%
			Total Extractable Iron (Fe)	2024/06/18		104	%
			Total Extractable Magnesium (Mg)	2024/06/18		107	%
			Total Extractable Manganese (Mn)	2024/06/18		104	%
			Total Extractable Molybdenum (Mo)	2024/06/18		101	%
			Total Extractable Nickel (Ni)	2024/06/18		99	%
			Total Extractable Lead (Pb)	2024/06/18		101	%
			Total Extractable Potassium (K)	2024/06/18		105	%
			Total Extractable Selenium (Se)	2024/06/18		100	%
			Total Extractable Sodium (Na)	2024/06/18		106	%
			Total Extractable Thallium (Tl)	2024/06/18		100	%
			Total Extractable Titanium (Ti)	2024/06/18		103	%
			Total Extractable Uranium (U)	2024/06/18		99	%
			Total Extractable Vanadium (V)	2024/06/18		104	%
			Total Extractable Zinc (Zn)	2024/06/18		97	%
2533776	ST5	Method Blank	Total Extractable Aluminum (Al)	2024/06/18	<10		ug/L
			Total Extractable Antimony (Sb)	2024/06/18	<1.0		ug/L
			Total Extractable Silver (Ag)	2024/06/18	<1.0		ug/L
			Total Extractable Arsenic (As)	2024/06/18	<1.0		ug/L
			Total Extractable Barium (Ba)	2024/06/18	<2.0		ug/L
			Total Extractable Boron (B)	2024/06/18	<50		ug/L
			Total Extractable Cadmium (Cd)	2024/06/18	<0.20		ug/L
			Total Extractable Calcium (Ca)	2024/06/18	<500		ug/L
			Total Extractable Chromium (Cr)	2024/06/18	<5.0		ug/L
			Total Extractable Cobalt (Co)	2024/06/18	<1.0		ug/L
			Total Extractable Copper (Cu)	2024/06/18	<1.0		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/06/18	<1000		ug/L
			Total Extractable Tin (Sn)	2024/06/18	<2.0		ug/L
			Total Extractable Iron (Fe)	2024/06/18	<60		ug/L
			Total Extractable Magnesium (Mg)	2024/06/18	<100		ug/L
			Total Extractable Manganese (Mn)	2024/06/18	<1.0		ug/L
			Total Extractable Molybdenum (Mo)	2024/06/18	<1.0		ug/L
			Total Extractable Nickel (Ni)	2024/06/18	<2.0		ug/L
			Total Extractable Lead (Pb)	2024/06/18	<0.50		ug/L
			Total Extractable Potassium (K)	2024/06/18	<500		ug/L
			Total Extractable Selenium (Se)	2024/06/18	<3.0		ug/L
			Total Extractable Sodium (Na)	2024/06/18	<500		ug/L
			Total Extractable Thallium (Tl)	2024/06/18	<2.0		ug/L
			Total Extractable Titanium (Ti)	2024/06/18	<10		ug/L
			Total Extractable Uranium (U)	2024/06/18	<1.0		ug/L
			Total Extractable Vanadium (V)	2024/06/18	<2.0		ug/L
			Total Extractable Zinc (Zn)	2024/06/18	<7.0		ug/L
2533815	GXL	Spiked Blank	Phenols-4AAP	2024/06/17		98	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2533815	GXL	Method Blank	Phenols-4AAP	2024/06/17	<0.0020		mg/L
2533855	A2B	Spiked Blank	Total suspended solids (TSS)	2024/06/17		94	%
2533855	A2B	Method Blank	Total suspended solids (TSS)	2024/06/17	<2.0		mg/L
2533918	DY3	Spiked Blank	COD	2024/06/18		96	%
2533918	DY3	Spiked Blank DUP	COD	2024/06/18		88	%
2533918	DY3	Method Blank	COD	2024/06/18	<5.0		mg/L
2534906	LI	Spiked Blank	Sulfides (S2-)	2024/06/20		97	%
2534906	LI	Method Blank	Sulfides (S2-)	2024/06/20	<0.020		mg/L
2535128	EMT	Matrix Spike	Reactive silica (SiO2)	2024/06/19		91	%
2535128	EMT	Spiked Blank	Reactive silica (SiO2)	2024/06/19		94	%
2535128	EMT	Method Blank	Reactive silica (SiO2)	2024/06/19	<0.50		mg/L
2537081	ST5	Spiked Blank	Total Extractable Mercury (Hg)	2024/06/27		92	%
2537081	ST5	Method Blank	Total Extractable Mercury (Hg)	2024/06/27	<0.000010		mg/L
2537265	VPL	Spiked Blank	TKN Total Kjeldahl Nitrogen	2024/06/26		98	%
2537265	VPL	Method Blank	TKN Total Kjeldahl Nitrogen	2024/06/26	<0.40		mg/L
2539185	éFV	Spiked Blank	Radium-226	2024/06/28		91	%
			Radium-226	2024/06/28		91	%
			Radium-226	2024/06/28		91	%
2539185	éFV	Method Blank	Radium-226	2024/06/28	<0.005		Bq/L
			Radium-226	2024/06/28	<0.005		Bq/L
			Radium-226	2024/06/28	<0.005		Bq/L
2539550	ST5	Spiked Blank	Total Extractable Aluminum (Al)	2024/07/05		100	%
			Total Extractable Antimony (Sb)	2024/07/05		108	%
			Total Extractable Silver (Ag)	2024/07/05		100	%
			Total Extractable Arsenic (As)	2024/07/05		102	%
			Total Extractable Barium (Ba)	2024/07/05		99	%
			Total Extractable Boron (B)	2024/07/05		83	%
			Total Extractable Cadmium (Cd)	2024/07/05		99	%
			Total Extractable Calcium (Ca)	2024/07/05		91	%
			Total Extractable Chromium (Cr)	2024/07/05		93	%
			Total Extractable Cobalt (Co)	2024/07/05		95	%
			Total Extractable Copper (Cu)	2024/07/05		95	%
			Total Extractable Tin (Sn)	2024/07/05		108	%
			Total Extractable Iron (Fe)	2024/07/05		95	%
			Total Extractable Magnesium (Mg)	2024/07/05		80	%
			Total Extractable Manganese (Mn)	2024/07/05		94	%
			Total Extractable Mercury (Hg)	2024/07/05		102	%
			Total Extractable Molybdenum (Mo)	2024/07/05		93	%
			Total Extractable Nickel (Ni)	2024/07/05		94	%
			Total Extractable Lead (Pb)	2024/07/05		102	%
			Total Extractable Potassium (K)	2024/07/05		91	%
			Total Extractable Selenium (Se)	2024/07/05		98	%
			Total Extractable Sodium (Na)	2024/07/05		93	%
			Total Extractable Thallium (Tl)	2024/07/05		100	%
			Total Extractable Titanium (Ti)	2024/07/05		93	%
			Total Extractable Uranium (U)	2024/07/05		92	%
			Total Extractable Vanadium (V)	2024/07/05		97	%
			Total Extractable Zinc (Zn)	2024/07/05		96	%
2539550	ST5	Method Blank	Total Extractable Aluminum (Al)	2024/07/05	<5.0		ug/L
			Total Extractable Antimony (Sb)	2024/07/05	<0.0080		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Silver (Ag)	2024/07/05	<0.0030		ug/L
			Total Extractable Arsenic (As)	2024/07/05	<0.080		ug/L
			Total Extractable Barium (Ba)	2024/07/05	<0.030		ug/L
			Total Extractable Boron (B)	2024/07/05	<0.30		ug/L
			Total Extractable Cadmium (Cd)	2024/07/05	<0.0060		ug/L
			Total Extractable Calcium (Ca)	2024/07/05	<20		ug/L
			Total Extractable Chromium (Cr)	2024/07/05	<0.040		ug/L
			Total Extractable Cobalt (Co)	2024/07/05	<0.0080		ug/L
			Total Extractable Copper (Cu)	2024/07/05	<0.050		ug/L
			Total Extractable Tin (Sn)	2024/07/05	<0.050		ug/L
			Total Extractable Iron (Fe)	2024/07/05	<0.50		ug/L
			Total Extractable Magnesium (Mg)	2024/07/05	<10		ug/L
			Total Extractable Manganese (Mn)	2024/07/05	<0.030		ug/L
			Total Extractable Mercury (Hg)	2024/07/05	<0.0020		ug/L
			Total Extractable Molybdenum (Mo)	2024/07/05	<0.010		ug/L
			Total Extractable Nickel (Ni)	2024/07/05	<0.030		ug/L
			Total Extractable Lead (Pb)	2024/07/05	<0.010		ug/L
			Total Extractable Potassium (K)	2024/07/05	<10		ug/L
			Total Extractable Selenium (Se)	2024/07/05	<0.050		ug/L
			Total Extractable Sodium (Na)	2024/07/05	<10		ug/L
			Total Extractable Thallium (Tl)	2024/07/05	<0.010		ug/L
			Total Extractable Titanium (Ti)	2024/07/05	<0.40		ug/L
			Total Extractable Uranium (U)	2024/07/05	<0.0010		ug/L
			Total Extractable Vanadium (V)	2024/07/05	<0.050		ug/L
			Total Extractable Zinc (Zn)	2024/07/05	<0.50		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/07/05	<40		ug/L

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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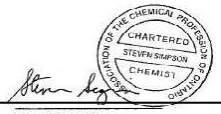
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

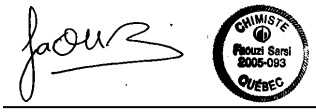
Abdeslam Siaida, B.Sc. Chemist, Montréal, Senior Analyst

Cansu Bolukbas
Membre OCQ#2324-095

Cansu Bolukbas, B.Sc., Chemist, Montreal, Analyst II

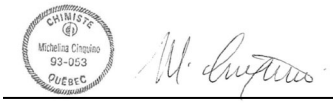


Steven Simpson, Lab Director

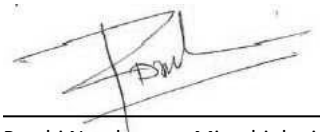


Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader



Michelina Cinquino, Analyst II



Prachi Nandanwar, Microbiologist,Montreal, Scientific Specialist

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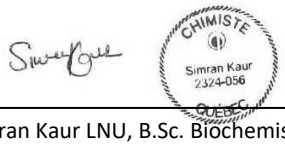
VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:



Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

Zineb El Ouali
Membre OCQ#2021-051

Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 139854

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/13
Report #: R2968341
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C439377
Received: 2024/07/19, 09:00

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Alkalinity (end point 4.5)-waters	2	N/A	2024/07/20	STL SOP-00038	SM 24 2320-B m
Anions in water	2	N/A	2024/07/21	STL SOP-00014	MA.300–Ions 1.3 R6 m
Biochemical Oxygen Demand (5 days) (4)	2	2024/07/21	2024/07/26	STL SOP-00008	MA315-DBO 1.1 R3 m
Pet. Hydrocarbons (C10-C50) in waters	2	2024/07/20	2024/07/21	STL SOP-00173	MA.400–HYD. 1.1 R3 m
Total Cyanide in waters	2	2024/07/24	2024/07/25	STL SOP-00035	MA300-CN 1.2 R4 m
Chemical Oxygen Demand	2	2024/07/25	2024/07/25	STL SOP-00009	MA315-DCO 1.1 R4 m
Fecal Coliforms 10-60 000 CFU/100ml _WW	2	N/A	2024/07/19	QUE SOP-00321	MA.700-Fec.Ec 1.0 R5
Total Coliforms 10-80 000 CFU/100ml _WW	2	N/A	2024/07/19	QUE SOP-00321	MA.700-Col 1.0 R4
Conductivity in waters	2	N/A	2024/07/26	STL SOP-00038	SM 24 2510-B m
Hexavalent Chromium (Cr6+)-waste waters	2	N/A	2024/07/25	STL SOP-00037	MA200-CrHex 1.1 R1 m
Dissolved Organic Carbon (5)	2	2024/07/19	2024/07/26	STL SOP-00243	SM 23 5310-B m
Fluoride in waters	2	N/A	2024/07/24	STL SOP-00038	SM 24 4500-F m
Total Extractable Hg Cold Vapour AF	2	2024/08/07	2024/08/12	STL SOP-00276	EPA 1631,rev. E m
Total Suspended Solids	2	2024/07/22	2024/07/22	STL SOP-00015	MA.104–S.S. 2.0 m
Total Extractable Metals	2	2024/07/25	2024/07/27	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Total Extractible Trace Metals by ICP-MS	2	2024/07/26	2024/07/27	STL SOP-00006	MA203–Mét Tra1.1 R1m
Ammonia Nitrogen in water	2	N/A	2024/07/25	STL SOP-00040	MA.300–N 2.0 R2 m
Nitrates(NO3-), Nitrites(NO2-)-water	2	N/A	2024/07/21	STL SOP-00014	MA.300–Ions 1.3 R6 m
Dissolved Oxygen	2	N/A	2024/07/19	STL SOP-00008	MA.315–DBO 1.1 R3 m
pH in water	2	N/A	2024/07/20	STL SOP-00038	MA.100–pH 1.1 R3 m
Total Phenols by 4-AAP in water	2	2024/07/22	2024/07/22	STL SOP-00033	MA404–I.Phé 2.2 R2 m
pH (site)- waters	2	N/A	2024/07/19		Test Kit
Total Phosphorus Low Level by ICP-MS (1)	2	2024/07/23	2024/07/25	QUE SOP-00132	MA.200–Mét. 1.2 R7 m
Sulfides (as S2-)-water	2	2024/07/22	2024/07/22	STL SOP-00273	SM4500-S2 rev.23m.
Sulfides (H2S)	2	N/A	2024/07/23	STL SOP-00273	SM4500-S2 rev.23m.
Total Dissolved Solids	2	2024/07/25	2024/07/25	STL SOP-00050	MA.115–S.D. 1.0 R4 m
Temperature (site)	2	N/A	2024/07/19		Thermometer
Tot. Kjeldahl Nitrogen(calc)-water	2	2024/07/24	2024/07/24	STL SOP-00077	MOE:TOTNUT-E3516v1.3
Total Organic Carbon-water (6)	2	N/A	2024/07/25	STL SOP-00243	SM 23 5310-B m

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 139854

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/13
Report #: R2968341
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C439377
Received: 2024/07/19, 09:00

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Radium-226 Low Level-waters (2, 7)	2	N/A	2024/08/06	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Reactive Silica(SiO2) (3)	2	2024/07/25	2024/07/25	ATL SOP 00022	EPA 366.0 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas - Québec, 2690 Avenue Dalton , Quebec, QC, G1P 3S4
(2) This test was performed by Bureau Veritas - Radiological, 6790 Kitimat Rd, Unit 4 , Mississauga, ON, L5N 5L9
(3) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(4) Please note that in the event a biochemical oxygen demand analysis cannot begin within the 48-hours holding time required (for a sample preserved at 4°C), sample will be frozen, unless otherwise specified by a regulation, to maintain it's integrity.
(5) DOC present in the sample should be considered as non-purgeable DOC
(6) TOC present in the sample should be considered as non-purgeable TOC
(7) Radium-226 results have not been corrected for blanks.

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 139854

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/13
Report #: R2968341
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C439377
Received: 2024/07/19, 09:00

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Bureau Veritas
13 Aug 2024 12:44:50

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		NG6832	NG6833		
Sampling Date		2024/07/16 09:38	2024/07/16 08:32		
COC Number		139854	139854		
	Units	DSO4-EE-GW-Q2-2024	DSO4-ER-GW-Q2-2024	RDL	QC Batch
INORGANICS					
Reactive silica (SiO2) †	mg/L	0.66	<0.50	0.50	2549094

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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HYDROCARBONS BY GCFID (SURFACE WATER)

Bureau Veritas ID		NG6832	NG6833		
Sampling Date		2024/07/16 09:38	2024/07/16 08:32		
COC Number		139854	139854		
	Units	DSO4-EE-GW-Q2-2024	DSO4-ER-GW-Q2-2024	RDL	QC Batch
PETROLEUM HYDROCARBONS					
Petroleum Hydrocarbons (C10-C50)	ug/L	<100	<100	100	2546800
Surrogate Recovery (%)					
1-Chlorooctadecane	%	78	67	N/A	2546800

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TOTAL EXTRACTABLE METALS (SURFACE WATER)

Bureau Veritas ID		NG6832	NG6833		
Sampling Date		2024/07/16 09:38	2024/07/16 08:32		
COC Number		139854	139854		
	Units	DSO4-EE-GW-Q2-2024	DSO4-ER-GW-Q2-2024	RDL	QC Batch
METALS					
Total Extractable Mercury (Hg) ††	mg/L	<0.000010	<0.000010	0.000010	2553245
Total phosphorous	ug/L	7.5	28	2.0	2547469
Total Extractable Aluminum (Al)	ug/L	13	17	10	2548422
Total Extractable Antimony (Sb)	ug/L	<1.0	<1.0	1.0	2548422
Total Extractable Silver (Ag)	ug/L	<1.0	<1.0	1.0	2548422
Total Extractable Arsenic (As)	ug/L	<1.0	<1.0	1.0	2548422
Total Extractable Barium (Ba)	ug/L	<2.0	<2.0	2.0	2548422
Total Extractable Boron (B) †	ug/L	<50	<50	50	2548422
Total Extractable Cadmium (Cd)	ug/L	<0.20	<0.20	0.20	2548422
Total Extractable Calcium (Ca) †	ug/L	<500	<500	500	2548422
Total Extractable Chromium (Cr)	ug/L	<5.0	<5.0	5.0	2548422
Total Extractable Cobalt (Co)	ug/L	<1.0	<1.0	1.0	2548422
Total Extractable Copper (Cu)	ug/L	<1.0	<1.0	1.0	2548422
Total Extractable Total Hardness (CaCO3) ††	ug/L	1300	<1000	1000	2548422
Total Extractable Tin (Sn)	ug/L	<2.0	<2.0	2.0	2548422
Total Extractable Iron (Fe)	ug/L	<60	110	60	2548422
Total Extractable Magnesium (Mg) †	ug/L	110	<100	100	2548422
Total Extractable Manganese (Mn)	ug/L	7.4	17	1.0	2548422
Total Extractable Mercury (Hg) ††	ug/L	<0.0020	<0.0020	0.0020	2549027
Total Extractable Molybdenum (Mo)	ug/L	<1.0	<1.0	1.0	2548422
Total Extractable Nickel (Ni)	ug/L	<2.0	<2.0	2.0	2548422
Total Extractable Lead (Pb)	ug/L	<0.50	<0.50	0.50	2548422
Total Extractable Potassium (K) †	ug/L	<500	<500	500	2548422
Total Extractable Selenium (Se)	ug/L	<3.0	<3.0	3.0	2548422
Total Extractable Sodium (Na)	ug/L	<500	<500	500	2548422
Total Extractable Thallium (Tl)	ug/L	<2.0	<2.0	2.0	2548422
Total Extractable Titanium (Ti) ††	ug/L	<10	<10	10	2548422
Total Extractable Uranium (U) ††	ug/L	<1.0	<1.0	1.0	2548422
Total Extractable Vanadium (V)	ug/L	<2.0	<2.0	2.0	2548422
Total Extractable Zinc (Zn)	ug/L	<7.0	<7.0	7.0	2548422

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited

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CONVENTIONAL PARAMETERS (SURFACE WATER)

Bureau Veritas ID		NG6832	NG6833	NG6833		
Sampling Date		2024/07/16 09:38	2024/07/16 08:32	2024/07/16 08:32		
COC Number		139854	139854	139854		
	Units	DSO4-EE-GW-Q2-2024	DSO4-ER-GW-Q2-2024	DSO4-ER-GW-Q2-2024 Lab-Dup	RDL	QC Batch
CONVENTIONALS						
BOD5	mg/L	<4.0	<4.0	<4.0	4.0	2546914
COD	mg/L	7.0	<5.0	N/A	5.0	2548464
Conductivity	mS/cm	<0.0010	<0.0010	N/A	0.0010	2546693
Dissolved organic carbon †	mg/L	1.6	2.0	N/A	0.20	2546640
Dissolved oxygen †	mg/L	10	9.5	N/A	1.0	2546664
Fluoride (F)	mg/L	<0.10	<0.10	N/A	0.10	2547761
Hexavalent Chromium (Cr 6+)	mg/L	<0.0080	<0.0080	N/A	0.0080	2548463
Nitrates (N-NO3-)	mg/L	<0.020	<0.020	N/A	0.020	2546884
Nitrites (N-NO2-)	mg/L	<0.020	<0.020	N/A	0.020	2546884
Nitrogen ammonia (N-NH4+ and N-NH3)	mg/L	0.41	0.047	N/A	0.020	2547689
pH	pH	5.96	5.66	N/A	N/A	2546672
pH (on-site) †	pH	5.81	5.38	N/A	N/A	ONSITE
Phenols-4AAP	mg/L	<0.0020	<0.0020	N/A	0.0020	2547241
Sulfides (H2S) †	mg/L	<0.021	<0.021	N/A	0.021	2546445
Sulfides (S2-)	mg/L	<0.020	<0.020	N/A	0.020	2547050
TKN Total Kjeldahl Nitrogen	mg/L	0.62	<0.40	N/A	0.40	2547999
Total Cyanide (CN)	mg/L	<0.0030	<0.0030	N/A	0.0030	2548340
Total Organic Carbon	mg/L	1.9	2.2	N/A	0.20	2547691
Alkalinity Total (as CaCO3) pH 4.5 †	mg/L	<1.0	<1.0	N/A	1.0	2546694
Chloride (Cl)	mg/L	0.080	0.069	N/A	0.050	2546885
Sulfates (SO4)	mg/L	<0.50	<0.50	N/A	0.50	2546885
Total Dissolved Solids	mg/L	180	140	N/A	10	2548642
Total suspended solids (TSS)	mg/L	7.0	5.0	N/A	2.0	2547116
On-site Measurements						
Temperature (°C) †	Celsius	16.60	16.20	N/A	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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MICROBIOLOGY (SURFACE WATER)

Bureau Veritas ID		NG6832		NG6833		
Sampling Date		2024/07/16 09:38		2024/07/16 08:32		
COC Number		139854		139854		
	Units	DSO4-EE-GW-Q2-2024	RDL	DSO4-ER-GW-Q2-2024	RDL	QC Batch
MICROBIOLGICAL TESTS						
Total coliforms	UFC/100ml	10000 (1)	100	270 (1)	10	2546596
Fecal coliforms	UFC/100ml	36 (1)	10	18 (1)	10	2546553

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Please note that the 48 hour retention period has been exceeded. The results should therefore be interpreted with caution.

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SUBCONTRACTED ANALYSIS (SURFACE WATER)

Bureau Veritas ID		NG6832	NG6833		
Sampling Date		2024/07/16 09:38	2024/07/16 08:32		
COC Number		139854	139854		
	Units	**DSO4-EE-GW-Q2-2024**	**DSO4-ER-GW-Q2-2024**	**RDL**	**QC Batch**
RADIONUCLIDE					
Radium-226	Bq/L	<0.005	<0.005	0.005	2552587

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Please note that the test pH (site)- waters was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

Radium-226 Low Level-waters: Arrived unpreserved, preserved upon reception at the laboratory.: NG6832
Dissolved Organic Carbon: Holding time already past upon reception.: NG6832
Fecal Coliforms 10-60 000 CFU/100ml _WW: Holding time already past upon reception.: NG6832
Total Coliforms 10-80 000 CFU/100ml _WW: Holding time already past upon reception.: NG6832
Dissolved Oxygen: Holding time already past upon reception.: NG6832
Biochemical Oxygen Demand (5 days): Holding time already past upon reception.: NG6832
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception.: NG6832
pH in water: Holding time already past upon reception.: NG6832
Dissolved Organic Carbon: Holding time already past upon reception.: NG6833
Fecal Coliforms 10-60 000 CFU/100ml _WW: Holding time already past upon reception.: NG6833
Total Coliforms 10-80 000 CFU/100ml _WW: Holding time already past upon reception.: NG6833
Dissolved Oxygen: Holding time already past upon reception.: NG6833
Biochemical Oxygen Demand (5 days): Holding time already past upon reception.: NG6833
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception.: NG6833
pH in water: Holding time already past upon reception.: NG6833

CONVENTIONAL PARAMETERS (SURFACE WATER)

pH, Solides dissous totaux: Délai d'analyse non respecté. Radium-226: Cette analyse est accréditée par le MELCCFP.

MICROBIOLOGY (SURFACE WATER)

The detection limits indicated are multiplied by the dilution factors used for the analysis of the samples.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2546640	BAG	Spiked Blank	Dissolved organic carbon	2024/07/26		102	%
2546640	BAG	Method Blank	Dissolved organic carbon	2024/07/26	<0.20		mg/L
2546672	BAG	Spiked Blank	pH	2024/07/20		101	%
2546693	BAG	Spiked Blank	Conductivity	2024/07/22		100	%
2546693	BAG	Method Blank	Conductivity	2024/07/22	<0.0010		mS/cm
2546694	BAG	Spiked Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/07/20		97	%
2546694	BAG	Method Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/07/20	<1.0		mg/L
2546800	EDM	Spiked Blank	1-Chlorooctadecane	2024/07/21		106	%
			Petroleum Hydrocarbons (C10-C50)	2024/07/21		94	%
2546800	EDM	Spiked Blank DUP	1-Chlorooctadecane	2024/07/21		104	%
			Petroleum Hydrocarbons (C10-C50)	2024/07/21		91	%
2546800	EDM	Method Blank	1-Chlorooctadecane	2024/07/21		77	%
			Petroleum Hydrocarbons (C10-C50)	2024/07/21	<100		ug/L
2546884	GXL	Spiked Blank	Nitrates (N-NO3-)	2024/07/21		99	%
			Nitrites (N-NO2-)	2024/07/21		101	%
2546884	GXL	Method Blank	Nitrates (N-NO3-)	2024/07/21	<0.020		mg/L
			Nitrites (N-NO2-)	2024/07/21	<0.020		mg/L
2546885	GXL	Spiked Blank	Chloride (Cl)	2024/07/21		103	%
			Sulfates (SO4)	2024/07/21		103	%
2546885	GXL	Method Blank	Chloride (Cl)	2024/07/21	<0.050		mg/L
			Sulfates (SO4)	2024/07/21	<0.50		mg/L
2546914	TOO	QC Standard	BOD5	2024/07/26		108	%
2546914	TOO	Spiked Blank	BOD5	2024/07/26		100	%
2546914	TOO	Spiked Blank DUP	BOD5	2024/07/26		103	%
2546914	TOO	Method Blank	BOD5	2024/07/26	<2.0		mg/L
2546914	TOO	Method Blank DUP	BOD5	2024/07/26	<2.0		mg/L
2547050	LI	Spiked Blank	Sulfides (S2-)	2024/07/22		99	%
2547050	LI	Method Blank	Sulfides (S2-)	2024/07/22	<0.020		mg/L
2547116	RIY	Spiked Blank	Total suspended solids (TSS)	2024/07/22		92	%
2547116	RIY	Method Blank	Total suspended solids (TSS)	2024/07/22	<2.0		mg/L
2547241	GXL	Spiked Blank	Phenols-4AAP	2024/07/22		99	%
2547241	GXL	Method Blank	Phenols-4AAP	2024/07/22	<0.0020		mg/L
2547469	MAW	Spiked Blank	Total phosphorous	2024/07/25		103	%
2547469	MAW	Method Blank	Total phosphorous	2024/07/25	<2.0		ug/L
2547689	SXU	Spiked Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/07/25		105	%
2547689	SXU	Method Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/07/25	<0.020		mg/L
2547691	BAG	Spiked Blank	Total Organic Carbon	2024/07/25		104	%
2547691	BAG	Method Blank	Total Organic Carbon	2024/07/25	<0.20		mg/L
2547761	ZLI	Spiked Blank	Fluoride (F)	2024/07/24		103	%
2547761	ZLI	Method Blank	Fluoride (F)	2024/07/24	<0.10		mg/L
2547999	SD9	Spiked Blank	TKN Total Kjeldahl Nitrogen	2024/07/24		108	%
2547999	SD9	Method Blank	TKN Total Kjeldahl Nitrogen	2024/07/24	<0.40		mg/L
2548340	ZZH	Spiked Blank	Total Cyanide (CN)	2024/07/25		93	%
2548340	ZZH	Method Blank	Total Cyanide (CN)	2024/07/25	<0.0030		mg/L
2548422	ST5	Spiked Blank	Total Extractable Aluminum (Al)	2024/07/27		109	%
			Total Extractable Antimony (Sb)	2024/07/27		115	%
			Total Extractable Silver (Ag)	2024/07/27		105	%
			Total Extractable Arsenic (As)	2024/07/27		105	%
			Total Extractable Barium (Ba)	2024/07/27		103	%
			Total Extractable Boron (B)	2024/07/27		104	%
			Total Extractable Cadmium (Cd)	2024/07/27		101	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Calcium (Ca)	2024/07/27		107	%
			Total Extractable Chromium (Cr)	2024/07/27		104	%
			Total Extractable Cobalt (Co)	2024/07/27		102	%
			Total Extractable Copper (Cu)	2024/07/27		100	%
			Total Extractable Tin (Sn)	2024/07/27		116	%
			Total Extractable Iron (Fe)	2024/07/27		108	%
			Total Extractable Magnesium (Mg)	2024/07/27		108	%
			Total Extractable Manganese (Mn)	2024/07/27		106	%
			Total Extractable Molybdenum (Mo)	2024/07/27		107	%
			Total Extractable Nickel (Ni)	2024/07/27		99	%
			Total Extractable Lead (Pb)	2024/07/27		106	%
			Total Extractable Potassium (K)	2024/07/27		108	%
			Total Extractable Selenium (Se)	2024/07/27		106	%
			Total Extractable Sodium (Na)	2024/07/27		112	%
			Total Extractable Thallium (Tl)	2024/07/27		106	%
			Total Extractable Titanium (Ti)	2024/07/27		108	%
			Total Extractable Uranium (U)	2024/07/27		104	%
			Total Extractable Vanadium (V)	2024/07/27		106	%
			Total Extractable Zinc (Zn)	2024/07/27		98	%
2548422	ST5	Method Blank	Total Extractable Aluminum (Al)	2024/07/27	<10		ug/L
			Total Extractable Antimony (Sb)	2024/07/27	<1.0		ug/L
			Total Extractable Silver (Ag)	2024/07/27	<1.0		ug/L
			Total Extractable Arsenic (As)	2024/07/27	<1.0		ug/L
			Total Extractable Barium (Ba)	2024/07/27	<2.0		ug/L
			Total Extractable Boron (B)	2024/07/27	<50		ug/L
			Total Extractable Cadmium (Cd)	2024/07/27	<0.20		ug/L
			Total Extractable Calcium (Ca)	2024/07/27	<500		ug/L
			Total Extractable Chromium (Cr)	2024/07/27	<5.0		ug/L
			Total Extractable Cobalt (Co)	2024/07/27	<1.0		ug/L
			Total Extractable Copper (Cu)	2024/07/27	<1.0		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/07/27	<1000		ug/L
			Total Extractable Tin (Sn)	2024/07/27	<2.0		ug/L
			Total Extractable Iron (Fe)	2024/07/27	<60		ug/L
			Total Extractable Magnesium (Mg)	2024/07/27	<100		ug/L
			Total Extractable Manganese (Mn)	2024/07/27	<1.0		ug/L
			Total Extractable Molybdenum (Mo)	2024/07/27	<1.0		ug/L
			Total Extractable Nickel (Ni)	2024/07/27	<2.0		ug/L
			Total Extractable Lead (Pb)	2024/07/27	<0.50		ug/L
			Total Extractable Potassium (K)	2024/07/27	<500		ug/L
			Total Extractable Selenium (Se)	2024/07/27	<3.0		ug/L
			Total Extractable Sodium (Na)	2024/07/27	<500		ug/L
			Total Extractable Thallium (Tl)	2024/07/27	<2.0		ug/L
			Total Extractable Titanium (Ti)	2024/07/27	<10		ug/L
			Total Extractable Uranium (U)	2024/07/27	<1.0		ug/L
			Total Extractable Vanadium (V)	2024/07/27	<2.0		ug/L
			Total Extractable Zinc (Zn)	2024/07/27	<7.0		ug/L
2548463	SXU	QC Standard	Hexavalent Chromium (Cr 6+)	2024/07/25		92	%
2548463	SXU	Spiked Blank	Hexavalent Chromium (Cr 6+)	2024/07/25		96	%
2548463	SXU	Method Blank	Hexavalent Chromium (Cr 6+)	2024/07/25	<0.0080		mg/L
2548464	DY3	Spiked Blank	COD	2024/07/25		106	%
2548464	DY3	Spiked Blank DUP	COD	2024/07/25		92	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2548464	DY3	Method Blank	COD	2024/07/25	<5.0		mg/L
2548642	JCT	Spiked Blank	Total Dissolved Solids	2024/07/25		92	%
2548642	JCT	Method Blank	Total Dissolved Solids	2024/07/25	<10		mg/L
2549027	ST5	Spiked Blank	Total Extractable Aluminum (Al)	2024/07/27		103	%
			Total Extractable Antimony (Sb)	2024/07/27		98	%
			Total Extractable Silver (Ag)	2024/07/27		105	%
			Total Extractable Arsenic (As)	2024/07/27		103	%
			Total Extractable Barium (Ba)	2024/07/27		96	%
			Total Extractable Boron (B)	2024/07/27		93	%
			Total Extractable Cadmium (Cd)	2024/07/27		97	%
			Total Extractable Calcium (Ca)	2024/07/27		101	%
			Total Extractable Chromium (Cr)	2024/07/27		97	%
			Total Extractable Cobalt (Co)	2024/07/27		97	%
			Total Extractable Copper (Cu)	2024/07/27		99	%
			Total Extractable Tin (Sn)	2024/07/27		103	%
			Total Extractable Iron (Fe)	2024/07/27		105	%
			Total Extractable Magnesium (Mg)	2024/07/27		107	%
			Total Extractable Manganese (Mn)	2024/07/27		96	%
			Total Extractable Mercury (Hg)	2024/07/27		143 (1)	%
			Total Extractable Molybdenum (Mo)	2024/07/27		93	%
			Total Extractable Nickel (Ni)	2024/07/27		94	%
			Total Extractable Lead (Pb)	2024/07/27		97	%
			Total Extractable Potassium (K)	2024/07/27		98	%
			Total Extractable Selenium (Se)	2024/07/27		97	%
			Total Extractable Sodium (Na)	2024/07/27		105	%
			Total Extractable Thallium (Tl)	2024/07/27		93	%
			Total Extractable Titanium (Ti)	2024/07/27		91	%
			Total Extractable Uranium (U)	2024/07/27		93	%
			Total Extractable Vanadium (V)	2024/07/27		101	%
			Total Extractable Zinc (Zn)	2024/07/27		94	%
2549027	ST5	Method Blank	Total Extractable Aluminum (Al)	2024/07/27	<5.0		ug/L
			Total Extractable Antimony (Sb)	2024/07/27	<0.0050		ug/L
			Total Extractable Silver (Ag)	2024/07/27	<0.0030		ug/L
			Total Extractable Arsenic (As)	2024/07/27	<0.080		ug/L
			Total Extractable Barium (Ba)	2024/07/27	<0.030		ug/L
			Total Extractable Boron (B)	2024/07/27	<0.30		ug/L
			Total Extractable Cadmium (Cd)	2024/07/27	<0.0060		ug/L
			Total Extractable Calcium (Ca)	2024/07/27	<20		ug/L
			Total Extractable Chromium (Cr)	2024/07/27	<0.040		ug/L
			Total Extractable Cobalt (Co)	2024/07/27	<0.0080		ug/L
			Total Extractable Copper (Cu)	2024/07/27	<0.050		ug/L
			Total Extractable Tin (Sn)	2024/07/27	<0.050		ug/L
			Total Extractable Iron (Fe)	2024/07/27	<0.50		ug/L
			Total Extractable Magnesium (Mg)	2024/07/27	<10		ug/L
			Total Extractable Manganese (Mn)	2024/07/27	<0.030		ug/L
			Total Extractable Mercury (Hg)	2024/07/27	<0.0020		ug/L
			Total Extractable Molybdenum (Mo)	2024/07/27	<0.010		ug/L
			Total Extractable Nickel (Ni)	2024/07/27	<0.030		ug/L
			Total Extractable Lead (Pb)	2024/07/27	<0.010		ug/L
			Total Extractable Potassium (K)	2024/07/27	<10		ug/L
			Total Extractable Selenium (Se)	2024/07/27	<0.050		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Sodium (Na)	2024/07/27	<10		ug/L
			Total Extractable Thallium (Tl)	2024/07/27	<0.010		ug/L
			Total Extractable Titanium (Ti)	2024/07/27	<0.40		ug/L
			Total Extractable Uranium (U)	2024/07/27	<0.0010		ug/L
			Total Extractable Vanadium (V)	2024/07/27	<0.050		ug/L
			Total Extractable Zinc (Zn)	2024/07/27	<0.50		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/07/27	<40		ug/L
2549094	EMT	Matrix Spike	Reactive silica (SiO2)	2024/07/25		146 (2)	%
2549094	EMT	Spiked Blank	Reactive silica (SiO2)	2024/07/25		83	%
2549094	EMT	Method Blank	Reactive silica (SiO2)	2024/07/25	<0.50		mg/L
2552587	FK1	Spiked Blank	Radium-226	2024/08/04		90	%
2552587	FK1	Method Blank	Radium-226	2024/08/04	<0.005		Bq/L
2553245	NET	Spiked Blank	Total Extractable Mercury (Hg)	2024/08/12		95	%
2553245	NET	Method Blank	Total Extractable Mercury (Hg)	2024/08/12	<0.000010		mg/L

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria

(2) Poor spike recovery due to probable sample matrix interference.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Colleen Acker, Scientific Service Specialist

Cansu Bolukbas
Membre OCQ#2324-095
Cansu Bolukbas, B.Sc., Chemist, Montreal, Analyst II

Blake Barber, Laboratory Manager

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader

Michelina Cinquino, Analyst II

Prachi Nandanwar, Microbiologist,Montreal, Scientific Specialist

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VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

Noureddine Chafiaai, B.Sc., Chemist, Montreal, Team leader

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

Zineb El Ouali
Membre OCQ#2021-051

Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 143357

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/03
Report #: R2984454
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C446187
Received: 2024/08/20, 09:00

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Alkalinity (end point 4.5)-waters	1	N/A	2024/08/20	STL SOP-00038	SM 24 2320-B m
Total Alkalinity (end point 4.5)-waters	1	N/A	2024/08/26	STL SOP-00038	SM 24 2320-B m
Anions in water	2	N/A	2024/08/22	STL SOP-00014	MA.300–Ions 1.3 R6 m
Biochemical Oxygen Demand (5 days) (4)	2	2024/08/24	2024/08/29	STL SOP-00008	MA315-DBO 1.1 R3 m
Pet. Hydrocarbons (C10-C50) in waters	2	2024/08/22	2024/08/24	STL SOP-00173	MA.400–HYD. 1.1 R3 m
Total Cyanide in waters	2	N/A	2024/08/26	STL SOP-00035	MA300-CN 1.2 R4 m
Chemical Oxygen Demand	2	2024/08/26	2024/08/26	STL SOP-00009	MA315-DCO 1.1 R4 m
Fecal Coliforms 10-60 000 CFU/100ml _WW	2	N/A	2024/08/20	QUE SOP-00321	MA.700-Fec.Ec 1.0 R5
Total Coliforms 10-80 000 CFU/100ml _WW	2	N/A	2024/08/20	QUE SOP-00321	MA.700-Col 1.0 R4
Conductivity in waters	2	N/A	2024/08/26	STL SOP-00038	SM 24 2510-B m
Hexavalent Chromium (Cr6+)-waste waters	2	N/A	2024/08/26	STL SOP-00037	MA200-CrHex 1.1 R1 m
Dissolved Organic Carbon (5)	1	2024/08/26	2024/08/26	STL SOP-00243	SM 23 5310-B m
Dissolved Organic Carbon (5)	1	2024/08/26	2024/08/27	STL SOP-00243	SM 23 5310-B m
Fluoride in waters	1	N/A	2024/08/23	STL SOP-00038	SM 24 4500-F m
Fluoride in waters	1	N/A	2024/08/26	STL SOP-00038	SM 24 4500-F m
Total Extractable Hg Cold Vapour AF	2	2024/08/21	2024/08/23	STL SOP-00276	EPA 1631,rev. E m
Total Suspended Solids	2	N/A	2024/08/24	STL SOP-00015	MA.104–S.S. 2.0 m
Total Extractible Trace Metals by ICP-MS	2	2024/08/29	2024/09/03	STL SOP-00006	MA203–Mét Tra1.1 R1m
Ammonia Nitrogen in water	2	N/A	2024/08/23	STL SOP-00040	MA.300–N 2.0 R2 m
Nitrates(NO3-), Nitrites(NO2-)-water	2	N/A	2024/08/22	STL SOP-00014	MA.300–Ions 1.3 R6 m
Dissolved Oxygen	2	N/A	2024/08/20	STL SOP-00008	MA.315–DBO 1.1 R3 m
pH in water	2	N/A	2024/08/20	STL SOP-00038	MA.100–pH 1.1 R3 m
Total Phenols by 4-AAP in water	2	N/A	2024/08/23	STL SOP-00033	MA404–I.Phé 2.2 R2 m
pH (site)- waters	2	N/A	2024/08/20		Test Kit
Total Phosphorus Low Level by ICP-MS (1)	2	2024/08/23	2024/08/23	QUE SOP-00132	MA.200–Mét. 1.2 R7 m
Sulfides (as S2-)-water	2	2024/08/22	2024/08/22	STL SOP-00273	SM4500-S2 rev.23m.
Sulfides (H2S)	2	N/A	2024/08/23	STL SOP-00273	SM4500-S2 rev.23m.
Total Dissolved Solids	2	N/A	2024/08/26	STL SOP-00050	MA.115–S.D. 1.0 R4 m
Temperature (site)	2	N/A	2024/08/20		Thermometer
Tot. Kjeldahl Nitrogen(calc)-water	2	2024/08/27	2024/08/27	STL SOP-00077	MOE:TOTNUT-E3516v1.3

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 143357

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/03
Report #: R2984454
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C446187
Received: 2024/08/20, 09:00

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Organic Carbon-water (6)	1	N/A	2024/08/23	STL SOP-00243	SM 23 5310-B m
Total Organic Carbon-water (6)	1	N/A	2024/08/24	STL SOP-00243	SM 23 5310-B m
Radium-226 Low Level-waters (2, 7)	2	N/A	2024/09/17	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Reactive Silica(SiO2) (3)	2	2024/08/23	2024/08/26	ATL SOP 00022	EPA 366.0 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas - Québec, 2690 Avenue Dalton , Quebec, QC, G1P 3S4
(2) This test was performed by Bureau Veritas - Radiological, 6790 Kitimat Rd, Unit 4 , Mississauga, ON, L5N 5L9
(3) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(4) Please note that in the event a biochemical oxygen demand analysis cannot begin within the 48-hours holding time required (for a sample preserved at 4°C), sample will be frozen, unless otherwise specified by a regulation, to maintain it's integrity.

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Your P.O. #: 3000001770
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 143357

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/03
Report #: R2984454
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C446187

Received: 2024/08/20, 09:00

(5) DOC present in the sample should be considered as non-purgeable DOC
(6) TOC present in the sample should be considered as non-purgeable TOC
(7) Radium-226 results have not been corrected for blanks.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
03 Oct 2024 14:39:46

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		NJ7777	NJ7778		
Sampling Date		2024/08/19 08:53	2024/08/19 07:40		
COC Number		143357	143357		
	Units	DSO4-EE-GW-Q3-2024	DSO4-ER-GW-Q3-2024	RDL	QC Batch
INORGANICS					
Reactive silica (SiO2) †	mg/L	0.58	<0.50	0.50	2560168

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770

HYDROCARBONS BY GCFID (SURFACE WATER)

Bureau Veritas ID		NJ7777	NJ7778		
Sampling Date		2024/08/19 08:53	2024/08/19 07:40		
COC Number		143357	143357		
	Units	DSO4-EE-GW-Q3-2024	DSO4-ER-GW-Q3-2024	RDL	QC Batch
PETROLEUM HYDROCARBONS					
Petroleum Hydrocarbons (C10-C50)	ug/L	<100	<100	100	2558827
Surrogate Recovery (%)					
1-Chlorooctadecane	%	75	73	N/A	2558827

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TOTAL EXTRACTABLE METALS (SURFACE WATER)

Bureau Veritas ID		NJ7777			NJ7778		
Sampling Date		2024/08/19 08:53			2024/08/19 07:40		
COC Number		143357			143357		
	Units	DSO4-EE-GW-Q3-2024	RDL	QC Batch	DSO4-ER-GW-Q3-2024	RDL	QC Batch
METALS							
Total Extractable Mercury (Hg) †	mg/L	<0.000010	0.000010	2558334	<0.000010	0.000010	2558334
Total phosphorous	ug/L	3.9	2.0	2559335	9.2	2.0	2559335
Total Extractable Aluminum (Al) †	ug/L	<5.0	5.0	2561512	18	5.0	2561512
Total Extractable Antimony (Sb) †	ug/L	0.016	0.0050	2561512	0.020	0.0050	2561512
Total Extractable Silver (Ag) †	ug/L	0.0034	0.0030	2561512	0.0047	0.0030	2561512
Total Extractable Arsenic (As) †	ug/L	<0.080	0.080	2561512	<0.080	0.080	2561512
Total Extractable Barium (Ba) †	ug/L	0.67	0.030	2561512	0.68	0.030	2561512
Total Extractable Boron (B) †	ug/L	0.96	0.30	2561512	0.57	0.30	2561512
Total Extractable Cadmium (Cd) †	ug/L	<0.0060	0.0060	2561512	0.0065	0.0060	2561512
Total Extractable Calcium (Ca) †	ug/L	150	20	2561512	110	20	2561512
Total Extractable Chromium (Cr) †	ug/L	<0.040	0.040	2561512	0.043	0.040	2561512
Total Extractable Cobalt (Co) †	ug/L	<0.0080	0.0080	2561512	0.025	0.0080	2561512
Total Extractable Copper (Cu) †	ug/L	0.14	0.050	2561512	0.20	0.050	2561512
Total Extractable Tin (Sn) †	ug/L	<0.050	0.050	2561512	<0.050	0.050	2561512
Total Extractable Iron (Fe) †	ug/L	13	0.50	2561512	170	0.50	2561512
Total Extractable Magnesium (Mg) †	ug/L	100	10	2561512	59	10	2561512
Total Extractable Manganese (Mn) †	ug/L	6.2	0.030	2561512	18	0.030	2561512
Total Extractable Mercury (Hg) †	ug/L	<0.0020	0.0020	2561512	<0.0020	0.0020	2561512
Total Extractable Molybdenum (Mo) †	ug/L	0.056	0.010	2561512	0.017	0.010	2561512
Total Extractable Nickel (Ni) †	ug/L	0.081	0.030	2561512	0.11	0.030	2561512
Total Extractable Lead (Pb) †	ug/L	<0.010	0.010	2561512	0.040	0.010	2561512
Total Extractable Potassium (K) †	ug/L	96	10	2561512	85	10	2561512
Total Extractable Selenium (Se) †	ug/L	<0.050	0.050	2561512	<0.050	0.050	2561512
Total Extractable Sodium (Na) †	ug/L	170	10	2561512	69	10	2561512
Total Extractable Thallium (Tl) †	ug/L	<0.010	0.010	2561512	<0.010	0.010	2561512
Total Extractable Titanium (Ti) †	ug/L	<0.40	0.40	2561512	<0.40	0.40	2561512
Total Extractable Uranium (U) †	ug/L	0.0031	0.0010	2561512	0.0053	0.0010	2561512
Total Extractable Vanadium (V) †	ug/L	<0.050	0.050	2561512	<0.050	0.050	2561512
Total Extractable Zinc (Zn) †	ug/L	<0.50	0.50	2561512	3.9 (1)	2.9	2563637
Total Extractable Total Hardness (CaCO3) †	ug/L	800	40	2561512	520	40	2561512

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) The detection limit was raised due to a blank contamination.

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CONVENTIONAL PARAMETERS (SURFACE WATER)

Bureau Veritas ID		NJ7777	NJ7777		NJ7778		
Sampling Date		2024/08/19 08:53	2024/08/19 08:53		2024/08/19 07:40		
COC Number		143357	143357		143357		
	Units	**DSO4-EE-GW-Q3-2024**	**DSO4-EE-GW-Q3-2024 Lab-Dup**	**QC Batch**	**DSO4-ER-GW-Q3-2024**	**RDL**	**QC Batch**
CONVENTIONALS							
BOD5	mg/L	<4.0	N/A	2559784	<4.0	4.0	2559784
COD	mg/L	7.0	N/A	2560019	10	5.0	2560019
Conductivity	mS/cm	0.0012	N/A	2558164	0.0011	0.0010	2558164
Dissolved organic carbon †	mg/L	1.6	N/A	2560189	2.2	0.20	2560189
Dissolved oxygen †	mg/L	9.9	N/A	2558112	9.0	1.0	2558114
Fluoride (F)	mg/L	<0.10	N/A	2559172	<0.10	0.10	2559172
Hexavalent Chromium (Cr 6+)	mg/L	<0.0080	N/A	2560275	<0.0080	0.0080	2560275
Nitrates (N-NO3-)	mg/L	<0.020	N/A	2558681	<0.020	0.020	2558681
Nitrites (N-NO2-)	mg/L	<0.020	N/A	2558681	<0.020	0.020	2558681
Nitrogen ammonia (N-NH4+ and N-NH3)	mg/L	<0.020	N/A	2559510	0.22	0.020	2559510
pH	pH	7.74	N/A	2558069	5.58	N/A	2558069
pH (on-site) †	pH	5.79	N/A	ONSITE	5.81	N/A	ONSITE
Phenols-4AAP	mg/L	<0.0020	N/A	2559593	<0.0020	0.0020	2559593
Sulfides (H2S) †	mg/L	<0.021	N/A	2558027	<0.021	0.021	2558027
Sulfides (S2-)	mg/L	<0.020	N/A	2559133	<0.020	0.020	2559133
TKN Total Kjeldahl Nitrogen	mg/L	<0.40	N/A	2560449	0.46	0.40	2560449
Total Cyanide (CN)	mg/L	<0.0030	N/A	2559883	<0.0030	0.0030	2559883
Total Organic Carbon	mg/L	1.7	1.8	2559576	2.7	0.20	2559576
Alkalinity Total (as CaCO3) pH 4.5 †	mg/L	1.0	N/A	2558166	<1.0	1.0	2558166
Chloride (Cl)	mg/L	0.076	N/A	2558702	0.056	0.050	2558702
Sulfates (SO4)	mg/L	<0.50	N/A	2558702	<0.50	0.50	2558702
Total Dissolved Solids	mg/L	<10	N/A	2560036	17	10	2560036
Total suspended solids (TSS)	mg/L	<2.0	N/A	2559852	3.0	2.0	2559852
On-site Measurements							
Temperature (°C) †	Celsius	14.90	N/A	ONSITE	14.30	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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MICROBIOLOGY (SURFACE WATER)

Bureau Veritas ID		NJ7777		NJ7778		
Sampling Date		2024/08/19 08:53		2024/08/19 07:40		
COC Number		143357		143357		
	Units	DSO4-EE-GW-Q3-2024	RDL	DSO4-ER-GW-Q3-2024	RDL	QC Batch
MICROBIOLGICAL TESTS						
Total coliforms	UFC/100ml	300	10	3400	100	2558053
Fecal coliforms	UFC/100ml	18	10	90	10	2558050

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001770

SUBCONTRACTED ANALYSIS (SURFACE WATER)

Bureau Veritas ID		NJ7777	NJ7777	NJ7778		
Sampling Date		2024/08/19 08:53	2024/08/19 08:53	2024/08/19 07:40		
COC Number		143357	143357	143357		
	Units	**DSO4-EE-GW-Q3-2024**	**DSO4-EE-GW-Q3-2024 Lab-Dup**	**DSO4-ER-GW-Q3-2024**	**RDL**	**QC Batch**
RADIONUCLIDE						
Radium-226	Bq/L	<0.005	<0.005	<0.005	0.005	2568745

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Please note that the test pH (site)- waters was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

Revised version : Report regenerated to include the results for trace metals.

MICROBIOLOGY (SURFACE WATER)

For NJ7778 sample, The detection limits indicated are multiplied by the dilution factors used for the analysis of the samples. Radium-226: Cette analyse est accréditée par le MELCCFP.

Sample NJ7778, Total Extractible Trace Metals by ICP-MS: Test repeated.

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2558069	BAG	Spiked Blank	pH	2024/08/20		101	%
2558164	BAG	Spiked Blank	Conductivity	2024/08/20		103	%
2558164	BAG	Method Blank	Conductivity	2024/08/20	<0.0010		mS/cm
2558166	BAG	Spiked Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/08/20		102	%
2558166	BAG	Method Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/08/20	<1.0		mg/L
2558334	JGK	Spiked Blank	Total Extractable Mercury (Hg)	2024/08/23		118	%
2558334	JGK	Method Blank	Total Extractable Mercury (Hg)	2024/08/23	<0.000010		mg/L
2558681	M2S	Spiked Blank	Nitrates (N-NO3-)	2024/08/21		96	%
			Nitrites (N-NO2-)	2024/08/21		96	%
2558681	M2S	Method Blank	Nitrates (N-NO3-)	2024/08/21	<0.020		mg/L
			Nitrites (N-NO2-)	2024/08/21	<0.020		mg/L
2558702	M2S	Spiked Blank	Chloride (Cl)	2024/08/21		98	%
			Sulfates (SO4)	2024/08/21		102	%
2558702	M2S	Method Blank	Chloride (Cl)	2024/08/21	<0.050		mg/L
			Sulfates (SO4)	2024/08/21	<0.50		mg/L
2558827	MP9	Spiked Blank	1-Chlorooctadecane	2024/08/24		76	%
			Petroleum Hydrocarbons (C10-C50)	2024/08/24		89	%
2558827	MP9	Spiked Blank DUP	1-Chlorooctadecane	2024/08/24		87	%
			Petroleum Hydrocarbons (C10-C50)	2024/08/24		103	%
2558827	MP9	Method Blank	1-Chlorooctadecane	2024/08/24		69	%
			Petroleum Hydrocarbons (C10-C50)	2024/08/24	<100		ug/L
2559133	SD9	Spiked Blank	Sulfides (S2-)	2024/08/22		95	%
2559133	SD9	Method Blank	Sulfides (S2-)	2024/08/22	<0.020		mg/L
2559172	KME	Spiked Blank	Fluoride (F)	2024/08/22		99	%
2559172	KME	Method Blank	Fluoride (F)	2024/08/22	<0.10		mg/L
2559335	MAW	Spiked Blank	Total phosphorous	2024/08/23		120	%
2559335	MAW	Method Blank	Total phosphorous	2024/08/23	<2.0		ug/L
2559510	SXU	Spiked Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/08/23		101	%
2559510	SXU	Method Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/08/23	<0.020		mg/L
2559576	WPR	Spiked Blank	Total Organic Carbon	2024/08/23		99	%
2559576	WPR	Method Blank	Total Organic Carbon	2024/08/23	<0.20		mg/L
2559593	TEX	Spiked Blank	Phenols-4AAP	2024/08/23		101	%
2559593	TEX	Method Blank	Phenols-4AAP	2024/08/23	<0.0020		mg/L
2559784	TAR	QC Standard	BOD5	2024/08/29		109	%
2559784	TAR	Spiked Blank	BOD5	2024/08/29		101	%
2559784	TAR	Spiked Blank DUP	BOD5	2024/08/29		99	%
2559784	TAR	Method Blank	BOD5	2024/08/29	<2.0		mg/L
2559784	TAR	Method Blank DUP	BOD5	2024/08/29	<2.0		mg/L
2559852	RAI	Spiked Blank	Total suspended solids (TSS)	2024/08/24		89	%
2559852	RAI	Method Blank	Total suspended solids (TSS)	2024/08/24	<2.0		mg/L
2559883	HGU	Spiked Blank	Total Cyanide (CN)	2024/08/26		93	%
2559883	HGU	Method Blank	Total Cyanide (CN)	2024/08/26	<0.0030		mg/L
2560019	TOO	Spiked Blank	COD	2024/08/26		106	%
2560019	TOO	Spiked Blank DUP	COD	2024/08/26		104	%
2560019	TOO	Method Blank	COD	2024/08/26	<5.0		mg/L
2560036	A2B	Spiked Blank	Total Dissolved Solids	2024/08/26		109	%
2560036	A2B	Method Blank	Total Dissolved Solids	2024/08/26	<10		mg/L
2560168	EMT	Matrix Spike	Reactive silica (SiO2)	2024/08/26		90	%
2560168	EMT	Spiked Blank	Reactive silica (SiO2)	2024/08/26		92	%
2560168	EMT	Method Blank	Reactive silica (SiO2)	2024/08/26	<0.50		mg/L
2560189	WPR	Spiked Blank	Dissolved organic carbon	2024/08/26		95	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2560189	WPR	Method Blank	Dissolved organic carbon	2024/08/26	<0.20		mg/L
2560275	SXU	QC Standard	Hexavalent Chromium (Cr 6+)	2024/08/26		99	%
2560275	SXU	Spiked Blank	Hexavalent Chromium (Cr 6+)	2024/08/26		103	%
2560275	SXU	Method Blank	Hexavalent Chromium (Cr 6+)	2024/08/26	<0.0080		mg/L
2560449	SD9	Spiked Blank	TKN Total Kjeldahl Nitrogen	2024/08/27		95	%
2560449	SD9	Method Blank	TKN Total Kjeldahl Nitrogen	2024/08/27	<0.40		mg/L
2561512	WWO	Spiked Blank	Total Extractable Aluminum (Al)	2024/09/03		93	%
			Total Extractable Antimony (Sb)	2024/09/03		95	%
			Total Extractable Silver (Ag)	2024/09/03		93	%
			Total Extractable Arsenic (As)	2024/09/03		100	%
			Total Extractable Barium (Ba)	2024/09/03		91	%
			Total Extractable Boron (B)	2024/09/03		89	%
			Total Extractable Cadmium (Cd)	2024/09/03		101	%
			Total Extractable Calcium (Ca)	2024/09/03		98	%
			Total Extractable Chromium (Cr)	2024/09/03		101	%
			Total Extractable Cobalt (Co)	2024/09/03		106	%
			Total Extractable Copper (Cu)	2024/09/03		117	%
			Total Extractable Tin (Sn)	2024/09/03		102	%
			Total Extractable Iron (Fe)	2024/09/03		103	%
			Total Extractable Magnesium (Mg)	2024/09/03		93	%
			Total Extractable Manganese (Mn)	2024/09/03		99	%
			Total Extractable Mercury (Hg)	2024/09/03		99	%
			Total Extractable Molybdenum (Mo)	2024/09/03		97	%
			Total Extractable Nickel (Ni)	2024/09/03		105	%
			Total Extractable Lead (Pb)	2024/09/03		99	%
			Total Extractable Potassium (K)	2024/09/03		96	%
			Total Extractable Selenium (Se)	2024/09/03		105	%
			Total Extractable Sodium (Na)	2024/09/03		95	%
			Total Extractable Thallium (Tl)	2024/09/03		100	%
			Total Extractable Titanium (Ti)	2024/09/03		93	%
			Total Extractable Uranium (U)	2024/09/03		94	%
			Total Extractable Vanadium (V)	2024/09/03		102	%
			Total Extractable Zinc (Zn)	2024/09/03		161 (1)	%
2561512	WWO	Method Blank	Total Extractable Aluminum (Al)	2024/09/03	<5.0		ug/L
			Total Extractable Antimony (Sb)	2024/09/03	<0.0050		ug/L
			Total Extractable Silver (Ag)	2024/09/03	<0.0030		ug/L
			Total Extractable Arsenic (As)	2024/09/03	<0.080		ug/L
			Total Extractable Barium (Ba)	2024/09/03	<0.030		ug/L
			Total Extractable Boron (B)	2024/09/03	<0.30		ug/L
			Total Extractable Cadmium (Cd)	2024/09/03	<0.0060		ug/L
			Total Extractable Calcium (Ca)	2024/09/03	<20		ug/L
			Total Extractable Chromium (Cr)	2024/09/03	<0.040		ug/L
			Total Extractable Cobalt (Co)	2024/09/03	<0.0080		ug/L
			Total Extractable Copper (Cu)	2024/09/03	<0.050		ug/L
			Total Extractable Tin (Sn)	2024/09/03	<0.050		ug/L
			Total Extractable Iron (Fe)	2024/09/03	<0.50		ug/L
			Total Extractable Magnesium (Mg)	2024/09/03	<10		ug/L
			Total Extractable Manganese (Mn)	2024/09/03	<0.030		ug/L
			Total Extractable Mercury (Hg)	2024/09/03	<0.0020		ug/L
			Total Extractable Molybdenum (Mo)	2024/09/03	<0.010		ug/L
			Total Extractable Nickel (Ni)	2024/09/03	<0.030		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Lead (Pb)	2024/09/03	<0.010		ug/L
			Total Extractable Potassium (K)	2024/09/03	<10		ug/L
			Total Extractable Selenium (Se)	2024/09/03	<0.050		ug/L
			Total Extractable Sodium (Na)	2024/09/03	<10		ug/L
			Total Extractable Thallium (Tl)	2024/09/03	<0.010		ug/L
			Total Extractable Titanium (Ti)	2024/09/03	<0.40		ug/L
			Total Extractable Uranium (U)	2024/09/03	<0.0010		ug/L
			Total Extractable Vanadium (V)	2024/09/03	<0.050		ug/L
			Total Extractable Zinc (Zn)	2024/09/03	<0.50		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/09/03	<40		ug/L
2563637	DMI	Spiked Blank	Total Extractable Zinc (Zn)	2024/09/06		97	%
2563637	DMI	Method Blank	Total Extractable Zinc (Zn)	2024/09/06	<2.9 (2)		ug/L
2568745	SSZ	Spiked Blank	Radium-226	2024/09/17		88	%
			Radium-226	2024/09/17		88	%
2568745	SSZ	Method Blank	Radium-226	2024/09/17	<0.005		Bq/L
			Radium-226	2024/09/17	<0.005		Bq/L

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria

(2) The detection limit was raised due to a blank contamination.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Abadjaye ruth grace HOUNGBEDJI, Microbiologist

Peter Corbiere, B.Sc., Chemist, Montréal, Analyst 2

Steven Simpson, Lab Director

Michelina Cinquino, Analyst II

Roumaissa Ali Settah, Analyst 2

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Vanessa Seka, B.Sc., Chemist, Analyst II

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VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

CHIMISTE Shu Yang 2008-014 QUÉBEC

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

Zineb El Ouali
Membre OCQ#2021-051

Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 150719

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/25
Report #: R3002462
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C460080
Received: 2024/10/16, 16:15

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Alkalinity (end point 4.5)-waters	2	N/A	2024/10/16	STL SOP-00038	SM 24 2320-B m
Anions in water	2	N/A	2024/10/17	STL SOP-00014	MA.300–Ions 1.3 R6 m
Biochemical Oxygen Demand (5 days) (3)	2	2024/10/17	2024/10/22	STL SOP-00008	MA315-DBO 1.1 R3 m
Pet. Hydrocarbons (C10-C50) in waters	1	2024/10/21	2024/10/22	STL SOP-00173	MA.400–HYD. 1.1 R3 m
Pet. Hydrocarbons (C10-C50) in waters	1	2024/10/21	2024/10/25	STL SOP-00173	MA.400–HYD. 1.1 R3 m
Total Cyanide in waters	2	N/A	2024/10/18	STL SOP-00035	MA300-CN 1.2 R4 m
Chemical Oxygen Demand	1	2024/10/21	2024/10/21	STL SOP-00009	MA315-DCO 1.1 R4 m
Chemical Oxygen Demand	1	2024/10/22	2024/10/22	STL SOP-00009	MA315-DCO 1.1 R4 m
Fecal Coliforms 10-60 000 CFU/100ml _WW	2	N/A	2024/10/16	QUE SOP-00321	MA.700-Fec.Ec 1.0 R5
Total Coliforms 10-80 000 CFU/100ml _WW	2	N/A	2024/10/16	QUE SOP-00321	MA.700-Col 1.0 R4
Conductivity in waters	2	N/A	2024/10/16	STL SOP-00038	SM 24 2510-B m
Hexavalent Chromium (Cr6+)-waste waters	2	N/A	2024/10/24	STL SOP-00037	MA200-CrHex 1.1 R1 m
Dissolved Organic Carbon (4)	2	2024/10/17	2024/10/17	STL SOP-00243	SM 23 5310-B m
Fluoride in waters	2	N/A	2024/10/17	STL SOP-00038	SM 24 4500-F m
Total Extractable Hg Cold Vapour AF	2	2024/10/23	2024/10/25	STL SOP-00276	EPA 1631,rev. E m
Total Suspended Solids	2	N/A	2024/10/18	STL SOP-00015	MA.104–S.S. 2.0 m
Total Extractable Metals	2	2024/10/21	2024/10/23	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Ammonia Nitrogen in water	2	N/A	2024/10/19	STL SOP-00040	MA.300–N 2.0 R2 m
Nitrates(NO3-), Nitrites(NO2-)-water	2	N/A	2024/10/17	STL SOP-00014	MA.300–Ions 1.3 R6 m
Dissolved Oxygen	2	N/A	2024/10/16	STL SOP-00008	MA.315–DBO 1.1 R3 m
pH in water	2	N/A	2024/10/16	STL SOP-00038	MA.100–pH 1.1 R3 m
Total Phenols by 4-AAP in water	2	N/A	2024/10/21	STL SOP-00033	MA404–I.Phé 2.2 R2 m
pH (site)- waters	2	N/A	2024/10/16		Test Kit
Total Phosphorus Low Level by ICP-MS	2	2024/10/17	2024/10/21	STL SOP-00006	MA.200–Mét. 1.2 R7 m
Sulfides (as S2-)-water	2	2024/10/19	2024/10/19	STL SOP-00273	SM4500-S2 rev.23m.
Sulfides (H2S)	2	N/A	2024/10/21	STL SOP-00273	SM4500-S2 rev.23m.
Total Dissolved Solids	2	N/A	2024/10/18	STL SOP-00050	MA.115–S.D. 1.0 R4 m
Temperature (site)	2	N/A	2024/10/16		Thermometer
Tot. Kjeldahl Nitrogen(calc)-water	2	2024/10/22	2024/10/23	STL SOP-00077	MOE:TOTNUT-E3516v1.3
Total Organic Carbon-water (5)	2	N/A	2024/10/18	STL SOP-00243	SM 23 5310-B m

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Your P.O. #: 3000001868
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 150719

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/25
Report #: R3002462
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C460080
Received: 2024/10/16, 16:15

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Radium-226 Low Level-waters (1, 6)	1	N/A	2024/11/18	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Radium-226 Low Level-waters (1, 6)	1	N/A	2024/11/21	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Reactive Silica(SiO2) (2)	2	2024/11/07	2024/11/07	ATL SOP 00022	EPA 366.0 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas - Radiological, 6790 Kitimat Rd, Unit 4 , Mississauga, ON, L5N 5L9
(2) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(3) Please note that in the event a biochemical oxygen demand analysis cannot begin within the 48-hours holding time required (for a sample preserved at 4°C), sample will be frozen, unless otherwise specified by a regulation, to maintain it's integrity.

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Your P.O. #: 3000001868
Your Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your C.O.C. #: 150719

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/25
Report #: R3002462
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C460080

Received: 2024/10/16, 16:15

(4) DOC present in the sample should be considered as non-purgeable DOC
(5) TOC present in the sample should be considered as non-purgeable TOC
(6) Radium-226 results have not been corrected for blanks.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Bureau Veritas
25 Nov 2024 14:16:34

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TATA STEEL MINERALS CANADA
Client Project #: Goodwood Surface Water
Site Location: DSO4-Quebec
Your P.O. #: 3000001868

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		NQ8244	NQ8245		
Sampling Date		2024/10/15 09:51	2024/10/15 08:36		
COC Number		150719	150719		
	Units	DSO4-EE-GW-Q4-2024	DSO4-ER-GW-Q4-2024	RDL	QC Batch
INORGANICS					
Reactive silica (SiO2) †	mg/L	0.68	<0.50	0.50	2591019

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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HYDROCARBONS BY GCFID (SURFACE WATER)

Bureau Veritas ID		NQ8244	NQ8245		
Sampling Date		2024/10/15 09:51	2024/10/15 08:36		
COC Number		150719	150719		
	Units	DSO4-EE-GW-Q4-2024	DSO4-ER-GW-Q4-2024	RDL	QC Batch
PETROLEUM HYDROCARBONS					
Petroleum Hydrocarbons (C10-C50)	ug/L	<100	<100	100	2582380
Surrogate Recovery (%)					
1-Chlorooctadecane	%	67	78	N/A	2582380

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TOTAL EXTRACTABLE METALS (SURFACE WATER)

Bureau Veritas ID		NQ8244	NQ8244	NQ8245		
Sampling Date		2024/10/15 09:51	2024/10/15 09:51	2024/10/15 08:36		
COC Number		150719	150719	150719		
	Units	DSO4-EE-GW-Q4-2024	DSO4-EE-GW-Q4-2024 Lab-Dup	DSO4-ER-GW-Q4-2024	RDL	QC Batch
METALS						
Total Extractable Mercury (Hg) ††	mg/L	<0.000010	N/A	<0.000010	0.000010	2583805
Total phosphorous	ug/L	5.4	N/A	5.0	2.0	2581129
Total Extractable Aluminum (Al)	ug/L	<10	<10	33	10	2582771
Total Extractable Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	1.0	2582771
Total Extractable Silver (Ag)	ug/L	<1.0	<1.0	<1.0	1.0	2582771
Total Extractable Arsenic (As)	ug/L	<1.0	<1.0	<1.0	1.0	2582771
Total Extractable Barium (Ba)	ug/L	<2.0	<2.0	<2.0	2.0	2582771
Total Extractable Boron (B) †	ug/L	<50	<50	<50	50	2582771
Total Extractable Cadmium (Cd)	ug/L	<0.20	<0.20	<0.20	0.20	2582771
Total Extractable Calcium (Ca) †	ug/L	<500	<500	<500	500	2582771
Total Extractable Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	5.0	2582771
Total Extractable Cobalt (Co)	ug/L	<1.0	<1.0	<1.0	1.0	2582771
Total Extractable Copper (Cu)	ug/L	<1.0	<1.0	<1.0	1.0	2582771
Total Extractable Total Hardness (CaCO3) ††	ug/L	<1000	<1000	<1000	1000	2582771
Total Extractable Tin (Sn)	ug/L	<2.0	<2.0	<2.0	2.0	2582771
Total Extractable Iron (Fe)	ug/L	<60	<60	73	60	2582771
Total Extractable Magnesium (Mg) †	ug/L	<100	100	<100	100	2582771
Total Extractable Manganese (Mn)	ug/L	4.8	5.3	9.2	1.0	2582771
Total Extractable Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	1.0	2582771
Total Extractable Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	2.0	2582771
Total Extractable Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.50	2582771
Total Extractable Potassium (K) †	ug/L	<500	<500	<500	500	2582771
Total Extractable Selenium (Se)	ug/L	<3.0	<3.0	<3.0	3.0	2582771
Total Extractable Sodium (Na)	ug/L	<500	<500	<500	500	2582771
Total Extractable Thallium (Tl)	ug/L	<2.0	<2.0	<2.0	2.0	2582771
Total Extractable Titanium (Ti)	ug/L	<10	<10	10	10	2582771
Total Extractable Uranium (U)	ug/L	<1.0	<1.0	<1.0	1.0	2582771
Total Extractable Vanadium (V)	ug/L	<2.0	<2.0	<2.0	2.0	2582771
Total Extractable Zinc (Zn)	ug/L	<7.0	<7.0	<7.0	7.0	2582771

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
N/A = Not Applicable
† Parameter is not accredited

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CONVENTIONAL PARAMETERS (SURFACE WATER)

Bureau Veritas ID		NQ8244	NQ8244		
Sampling Date		2024/10/15 09:51	2024/10/15 09:51		
COC Number		150719	150719		
	Units	DSO4-EE-GW-Q4-2024	DSO4-EE-GW-Q4-2024 Lab-Dup	RDL	QC Batch
CONVENTIONALS					
BOD5	mg/L	<4.0	N/A	4.0	2581191
COD	mg/L	6.2	N/A	5.0	2582891
Conductivity	mS/cm	0.0026	N/A	0.0010	2580716
Dissolved organic carbon †	mg/L	1.4	N/A	0.20	2581253
Dissolved oxygen †	mg/L	12	N/A	1.0	2580696
Fluoride (F)	mg/L	<0.10	N/A	0.10	2580740
Hexavalent Chromium (Cr 6+)	mg/L	<0.0080	N/A	0.0080	2584194
Nitrates (N-NO3-)	mg/L	<0.020	N/A	0.020	2580784
Nitrites (N-NO2-)	mg/L	<0.020	N/A	0.020	2580784
Nitrogen ammonia (N-NH4+ and N-NH3)	mg/L	0.22	N/A	0.020	2582079
pH	pH	7.53	N/A	N/A	2580653
pH (on-site) †	pH	6.69	N/A	N/A	ONSITE
Phenols-4AAP	mg/L	<0.0020	<0.0020	0.0020	2582687
Sulfides (H2S) †	mg/L	<0.021	N/A	0.021	2580642
Sulfides (S2-)	mg/L	<0.020	N/A	0.020	2582204
TKN Total Kjeldahl Nitrogen	mg/L	<0.40	N/A	0.40	2582975
Total Cyanide (CN)	mg/L	<0.0030	N/A	0.0030	2581105
Total Organic Carbon	mg/L	1.5	N/A	0.20	2581168
Alkalinity Total (as CaCO3) pH 4.5 †	mg/L	2.4	N/A	1.0	2580717
Chloride (Cl)	mg/L	0.079	N/A	0.050	2580785
Sulfates (SO4)	mg/L	<0.50	N/A	0.50	2580785
Total Dissolved Solids	mg/L	21	N/A	10	2581770
Total suspended solids (TSS)	mg/L	<2.0	N/A	2.0	2581654
On-site Measurements					
Temperature (°C) †	Celsius	1.400	N/A	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS (SURFACE WATER)

Bureau Veritas ID		NQ8245	NQ8245		
Sampling Date		2024/10/15 08:36	2024/10/15 08:36		
COC Number		150719	150719		
	Units	**DSO4-ER-GW-Q4-2024**	**DSO4-ER-GW-Q4-2024 Lab-Dup**	**RDL**	**QC Batch**
CONVENTIONALS					
BOD5	mg/L	<4.0	N/A	4.0	2581191
COD	mg/L	7.0	N/A	5.0	2582619
Conductivity	mS/cm	0.0011	N/A	0.0010	2580716
Dissolved organic carbon †	mg/L	1.7	N/A	0.20	2581253
Dissolved oxygen †	mg/L	12	N/A	1.0	2580696
Fluoride (F)	mg/L	<0.10	N/A	0.10	2580740
Hexavalent Chromium (Cr 6+)	mg/L	<0.0080	N/A	0.0080	2584194
Nitrates (N-NO3-)	mg/L	<0.020	<0.020	0.020	2580784
Nitrites (N-NO2-)	mg/L	<0.020	<0.020	0.020	2580784
Nitrogen ammonia (N-NH4+ and N-NH3)	mg/L	0.81 (1)	N/A	0.020	2582079
pH	pH	5.84	N/A	N/A	2580653
pH (on-site) †	pH	5.74	N/A	N/A	ONSITE
Phenols-4AAP	mg/L	<0.0020	N/A	0.0020	2582687
Sulfides (H2S) †	mg/L	<0.020	N/A	0.020	2580642
Sulfides (S2-)	mg/L	<0.020	N/A	0.020	2582204
TKN Total Kjeldahl Nitrogen	mg/L	0.79 (1)	N/A	0.40	2582975
Total Cyanide (CN)	mg/L	<0.0030	N/A	0.0030	2581105
Total Organic Carbon	mg/L	1.9	N/A	0.20	2581168
Alkalinity Total (as CaCO3) pH 4.5 †	mg/L	<1.0	N/A	1.0	2580717
Chloride (Cl)	mg/L	0.062	N/A	0.050	2580785
Sulfates (SO4)	mg/L	<0.50	N/A	0.50	2580785
Total Dissolved Solids	mg/L	17	N/A	10	2581770
Total suspended solids (TSS)	mg/L	5.0	N/A	2.0	2581654
On-site Measurements					
Temperature (°C) †	Celsius	1.600	N/A	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable
(1) TKN < NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

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MICROBIOLOGY (SURFACE WATER)

Bureau Veritas ID		NQ8244	NQ8245		
Sampling Date		2024/10/15 09:51	2024/10/15 08:36		
COC Number		150719	150719		
	Units	DSO4-EE-GW-Q4-2024	DSO4-ER-GW-Q4-2024	RDL	QC Batch
MICROBIOLGICAL TESTS					
Total coliforms	UFC/100ml	120	180	10	2580684
Fecal coliforms	UFC/100ml	<10	<10	10	2580675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SUBCONTRACTED ANALYSIS (SURFACE WATER)

Bureau Veritas ID		NQ8244	NQ8245		
Sampling Date		2024/10/15 09:51	2024/10/15 08:36		
COC Number		150719	150719		
	Units	**DSO4-EE-GW-Q4-2024**	**DSO4-ER-GW-Q4-2024**	**RDL**	**QC Batch**
RADIONUCLIDE					
Radium-226	Bq/L	<0.005	<0.005	0.005	2597506

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Please note that the test pH (site)- waters was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

Radium-226 Low Level-waters: Arrived unpreserved, preserved upon reception at the laboratory.: NQ8244, NQ8245

CONVENTIONAL PARAMETERS (SURFACE WATER)

Dissolved oxygen: presence of head space (NQ8245). Radium-226: Cette analyse est accréditée par le MELCCFP.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2580653	ZLI	Spiked Blank	pH	2024/10/16		101	%
2580716	ZLI	Spiked Blank	Conductivity	2024/10/16		98	%
2580716	ZLI	Method Blank	Conductivity	2024/10/16	<0.0010		mS/cm
2580717	ZLI	Spiked Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/10/16		96	%
2580717	ZLI	Method Blank	Alkalinity Total (as CaCO3) pH 4.5	2024/10/16	<1.0		mg/L
2580740	ZLI	Spiked Blank	Fluoride (F)	2024/10/17		106	%
2580740	ZLI	Method Blank	Fluoride (F)	2024/10/17	<0.10		mg/L
2580784	M2S	Spiked Blank	Nitrates (N-NO3-)	2024/10/17		100	%
			Nitrites (N-NO2-)	2024/10/17		98	%
2580784	M2S	Method Blank	Nitrates (N-NO3-)	2024/10/17	<0.020		mg/L
			Nitrites (N-NO2-)	2024/10/17	<0.020		mg/L
2580785	M2S	Spiked Blank	Chloride (Cl)	2024/10/17		99	%
			Sulfates (SO4)	2024/10/17		98	%
2580785	M2S	Method Blank	Chloride (Cl)	2024/10/17	<0.050		mg/L
			Sulfates (SO4)	2024/10/17	<0.50		mg/L
2581105	GXL	Spiked Blank	Total Cyanide (CN)	2024/10/18		94	%
2581105	GXL	Method Blank	Total Cyanide (CN)	2024/10/18	<0.0030		mg/L
2581129	NET	Spiked Blank	Total phosphorous	2024/10/21		103	%
2581129	NET	Method Blank	Total phosphorous	2024/10/21	<2.0		ug/L
2581168	ZZH	Spiked Blank	Total Organic Carbon	2024/10/17		106	%
2581168	ZZH	Method Blank	Total Organic Carbon	2024/10/17	<0.20		mg/L
2581191	JCP	QC Standard	BOD5	2024/10/22		95	%
2581191	JCP	Spiked Blank	BOD5	2024/10/22		97	%
2581191	JCP	Spiked Blank DUP	BOD5	2024/10/22		99	%
2581191	JCP	Method Blank	BOD5	2024/10/22	<2.0		mg/L
2581191	JCP	Method Blank DUP	BOD5	2024/10/22	<2.0		mg/L
2581253	ZZH	Spiked Blank	Dissolved organic carbon	2024/10/17		106	%
2581253	ZZH	Method Blank	Dissolved organic carbon	2024/10/17	<0.20		mg/L
2581654	NSH	Spiked Blank	Total suspended solids (TSS)	2024/10/18		92	%
2581654	NSH	Method Blank	Total suspended solids (TSS)	2024/10/18	<2.0		mg/L
2581770	RIY	Spiked Blank	Total Dissolved Solids	2024/10/18		101	%
2581770	RIY	Method Blank	Total Dissolved Solids	2024/10/18	<10		mg/L
2582079	SXU	Spiked Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/10/19		99	%
2582079	SXU	Method Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/10/19	<0.020		mg/L
2582204	VPL	Spiked Blank	Sulfides (S2-)	2024/10/19		91	%
2582204	VPL	Method Blank	Sulfides (S2-)	2024/10/19	<0.020		mg/L
2582380	JNI	Spiked Blank	1-Chlorooctadecane	2024/10/22		81	%
			Petroleum Hydrocarbons (C10-C50)	2024/10/22		95	%
2582380	JNI	Spiked Blank DUP	1-Chlorooctadecane	2024/10/22		74	%
			Petroleum Hydrocarbons (C10-C50)	2024/10/22		87	%
2582380	JNI	Method Blank	1-Chlorooctadecane	2024/10/22		74	%
			Petroleum Hydrocarbons (C10-C50)	2024/10/22	<100		ug/L
2582619	DY3	Spiked Blank	COD	2024/10/21		100	%
2582619	DY3	Spiked Blank DUP	COD	2024/10/21		92	%
2582619	DY3	Method Blank	COD	2024/10/21	<5.0		mg/L
2582687	HGU	Spiked Blank	Phenols-4AAP	2024/10/21		103	%
2582687	HGU	Method Blank	Phenols-4AAP	2024/10/21	<0.0020		mg/L
2582771	DPA	Spiked Blank	Total Extractable Aluminum (Al)	2024/10/23		103	%
			Total Extractable Antimony (Sb)	2024/10/23		111	%
			Total Extractable Silver (Ag)	2024/10/23		97	%
			Total Extractable Arsenic (As)	2024/10/23		104	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Barium (Ba)	2024/10/23		108	%
			Total Extractable Boron (B)	2024/10/23		108	%
			Total Extractable Cadmium (Cd)	2024/10/23		100	%
			Total Extractable Calcium (Ca)	2024/10/23		107	%
			Total Extractable Chromium (Cr)	2024/10/23		101	%
			Total Extractable Cobalt (Co)	2024/10/23		97	%
			Total Extractable Copper (Cu)	2024/10/23		94	%
			Total Extractable Tin (Sn)	2024/10/23		110	%
			Total Extractable Iron (Fe)	2024/10/23		112	%
			Total Extractable Magnesium (Mg)	2024/10/23		104	%
			Total Extractable Manganese (Mn)	2024/10/23		99	%
			Total Extractable Molybdenum (Mo)	2024/10/23		105	%
			Total Extractable Nickel (Ni)	2024/10/23		95	%
			Total Extractable Lead (Pb)	2024/10/23		102	%
			Total Extractable Potassium (K)	2024/10/23		110	%
			Total Extractable Selenium (Se)	2024/10/23		104	%
			Total Extractable Sodium (Na)	2024/10/23		103	%
			Total Extractable Thallium (Tl)	2024/10/23		97	%
			Total Extractable Titanium (Ti)	2024/10/23		107	%
			Total Extractable Uranium (U)	2024/10/23		103	%
			Total Extractable Vanadium (V)	2024/10/23		98	%
			Total Extractable Zinc (Zn)	2024/10/23		104	%
2582771	DPA	Method Blank	Total Extractable Aluminum (Al)	2024/10/23	<10		ug/L
			Total Extractable Antimony (Sb)	2024/10/23	<1.0		ug/L
			Total Extractable Silver (Ag)	2024/10/23	<1.0		ug/L
			Total Extractable Arsenic (As)	2024/10/23	<1.0		ug/L
			Total Extractable Barium (Ba)	2024/10/23	<2.0		ug/L
			Total Extractable Boron (B)	2024/10/23	<50		ug/L
			Total Extractable Cadmium (Cd)	2024/10/23	<0.20		ug/L
			Total Extractable Calcium (Ca)	2024/10/23	<500		ug/L
			Total Extractable Chromium (Cr)	2024/10/23	<5.0		ug/L
			Total Extractable Cobalt (Co)	2024/10/23	<1.0		ug/L
			Total Extractable Copper (Cu)	2024/10/23	<1.0		ug/L
			Total Extractable Total Hardness (CaCO3)	2024/10/23	<1000		ug/L
			Total Extractable Tin (Sn)	2024/10/23	<2.0		ug/L
			Total Extractable Iron (Fe)	2024/10/23	<60		ug/L
			Total Extractable Magnesium (Mg)	2024/10/23	<100		ug/L
			Total Extractable Manganese (Mn)	2024/10/23	<1.0		ug/L
			Total Extractable Molybdenum (Mo)	2024/10/23	<1.0		ug/L
			Total Extractable Nickel (Ni)	2024/10/23	<2.0		ug/L
			Total Extractable Lead (Pb)	2024/10/23	<0.50		ug/L
			Total Extractable Potassium (K)	2024/10/23	<500		ug/L
			Total Extractable Selenium (Se)	2024/10/23	<3.0		ug/L
			Total Extractable Sodium (Na)	2024/10/23	<500		ug/L
			Total Extractable Thallium (Tl)	2024/10/23	<2.0		ug/L
			Total Extractable Titanium (Ti)	2024/10/23	<10		ug/L
			Total Extractable Uranium (U)	2024/10/23	<1.0		ug/L
			Total Extractable Vanadium (V)	2024/10/23	<2.0		ug/L
			Total Extractable Zinc (Zn)	2024/10/23	<7.0		ug/L
2582891	NET	QC Standard	COD	2024/10/22		94	%
2582891	NET	Spiked Blank	COD	2024/10/22		101	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2582891	NET	Method Blank	COD	2024/10/22	<5.0		mg/L
2582975	VPL	Spiked Blank	TKN Total Kjeldahl Nitrogen	2024/10/23		99	%
2582975	VPL	Method Blank	TKN Total Kjeldahl Nitrogen	2024/10/23	<0.40		mg/L
2583805	ST5	Spiked Blank	Total Extractable Mercury (Hg)	2024/10/25		101	%
2583805	ST5	Method Blank	Total Extractable Mercury (Hg)	2024/10/25	<0.000010		mg/L
2584194	SXU	QC Standard	Hexavalent Chromium (Cr 6+)	2024/10/24		99	%
2584194	SXU	Spiked Blank	Hexavalent Chromium (Cr 6+)	2024/10/24		100	%
2584194	SXU	Method Blank	Hexavalent Chromium (Cr 6+)	2024/10/24	<0.0080		mg/L
2591019	EMT	Matrix Spike	Reactive silica (SiO2)	2024/11/07		NC	%
2591019	EMT	Spiked Blank	Reactive silica (SiO2)	2024/11/07		90	%
2591019	EMT	Method Blank	Reactive silica (SiO2)	2024/11/07	<0.50		mg/L
2597506	éFV	Spiked Blank	Radium-226	2024/11/18		87	%
			Radium-226	2024/11/18		87	%
2597506	éFV	Method Blank	Radium-226	2024/11/21	<0.005		Bq/L
			Radium-226	2024/11/21	<0.005		Bq/L

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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Steven Simpson, Lab Director

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

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Michelina Cinquino, Analyst II

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VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

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Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Appendix IV. Certificates of Analysis – Sediments

Your P.O. #: 3000001770
Your Project #: Sediments
Site Location: DSO4
Your C.O.C. #: 145606

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/02
Report #: R3011541
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C450949
Received: 2024/09/10, 09:00

Sample Matrix: Sediment
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Anions in soil	2	2024/09/20	2024/09/22	STL SOP-00014	MA.300–Ions 1.3 R6 m
Pet. Hydrocarbons (C10-C50) in soils	1	2024/10/12	2024/10/15	STL SOP-00172	MA.400–HYD. 1.1 R3 m
Conductivity in sols	2	2024/09/27	2024/09/28	STL SOP-00038	MA.115-COND 1.1 R1m
Total Extractable Metals-Sediments	2	2024/09/24	2024/09/25	STL SOP-00062 STL SOP-00069	MA.200–Mét. 1.2 R9 m
Ammonia Nitrogen in soils	2	2024/09/20	2024/09/21	STL SOP-00040	MA.300–N 2.0 R2 m
pH in soils	2	2024/09/20	2024/09/20	STL SOP-00016	MA.100–pH 1.1 R3 m
Sulfur-soils	2	N/A	2024/09/20	STL SOP-00028	MA. 310-CS 1.0 R3 m
Extractable Silica by ICP	2	2024/09/20	2024/09/21	STL SOP-000069	MA.200–Mét. 1.2 R7 m
Particle size (pipettes & sieves) (1, 2)	2	N/A	2024/09/27	ATL SOP 00012	MSAMS'78/WREP-125R3m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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Your P.O. #: 3000001770
Your Project #: Sediments
Site Location: DSO4
Your C.O.C. #: 145606

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/02
Report #: R3011541
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C450949

Received: 2024/09/10, 09:00

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9

(2) Note: Graphical representation of larger fractions (PHI-4, PHI -3 and PHI -2) not applicable unless these optional parameters are specifically requested.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
02 Jan 2025 14:43:18

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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HYDROCARBONS BY GCFID (SEDIMENT)

Bureau Veritas ID		NM0458		
Sampling Date		2024/09/07 10:30		
COC Number		145606		
	Units	**SEE-GW**	**RDL**	**QC Batch**
% MOISTURE	%	89	N/A	N/A
PETROLEUM HYDROCARBONS				
Petroleum Hydrocarbons (C10-C50) †	mg/kg	<100	100	2579402
Surrogate Recovery (%)				
1-Chlorooctadecane	%	79	N/A	2579402

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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TOTAL EXTRACTABLE METALS (SEDIMENT)

Bureau Veritas ID		NM0458	NM0459		
Sampling Date		2024/09/07 10:30	2024/09/07 14:00		
COC Number		145606	145606		
	Units	SEE-GW	SER-GW	RDL	QC Batch
% MOISTURE	%	89	81	N/A	N/A
METALS					
Total Extractable Aluminum (Al) †	mg/kg	14000	18000	20	2570879
Total Extractable Silver (Ag) †	mg/kg	<2.0	<2.0	2.0	2570879
Total Extractable Arsenic (As) †	mg/kg	12	7.1	2.0	2570879
Total Extractable Barium (Ba) †	mg/kg	75	110	5.0	2570879
Total Extractable Boron (B) †	mg/kg	<5.0	<5.0	5.0	2570879
Total Extractable Cadmium (Cd) †	mg/kg	0.60	0.61	0.10	2570879
Total Extractable Chromium (Cr) †	mg/kg	37	35	2.0	2570879
Total Extractable Copper (Cu) †	mg/kg	26	35	1.0	2570879
Total Extractable Cobalt (Co) †	mg/kg	7.7	5.8	2.0	2570879
Total Extractable Tin (Sn) †	mg/kg	<5.0	<5.0	5.0	2570879
Total Extractable Iron (Fe) †	mg/kg	70000	59000	10	2570879
Total Extractable Manganese (Mn) †	mg/kg	390	190	2.0	2570879
Total Extractable Molybdenum (Mo) †	mg/kg	2.1	2.1	2.0	2570879
Total Extractable Nickel (Ni) †	mg/kg	23	32	1.0	2570879
Total Extractable Mercury (Hg) †	mg/kg	0.11	0.12	0.050	2570879
Total Extractable Total phosphorous †	mg/kg	640	680	20	2570879
Total Extractable Lead (Pb) †	mg/kg	15	13	5.0	2570879
Total Extractable Selenium (Se) †	mg/kg	<1.0	1.1	1.0	2570879
Silicon (Si) †	mg/kg	350	600	20	2569527
Total Extractable Uranium (U) †	mg/kg	<5.0	<5.0	5.0	2570879
Total Extractable Zinc (Zn) †	mg/kg	110	140	5.0	2570879

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS (SEDIMENT)

Bureau Veritas ID		NM0458	NM0459		
Sampling Date		2024/09/07 10:30	2024/09/07 14:00		
COC Number		145606	145606		
	Units	SEE-GW	SER-GW	RDL	QC Batch
% MOISTURE	%	89	81	N/A	N/A
CONVENTIONALS					
Conductivity †	mS/cm	0.10	0.072	0.020	2572602
Nitrogen ammonia (N-NH4+ and N-NH3) †	mg/kg	<50	<50	50	2569614
pH †	pH	5.85	5.75	N/A	2569552
Sulfur (S) †	% g/g	0.092	0.20	0.010	2569657
Bromide (Br-) †	mg/kg	<1.0	<1.0	1.0	2569734
Chloride (Cl) †	mg/kg	3.4	<1.0	1.0	2569734
Nitrate (N) and Nitrite(N) †	mg/kg	<1.0	<1.0	1.0	2569734
Sulfates (SO4) †	mg/kg	8.6	14	5.0	2569734

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Sediments
Site Location: DSO4
Your P.O. #: 3000001770

SUBCONTRACTED ANALYSIS (SEDIMENT)

Bureau Veritas ID		NM0458	NM0459		
Sampling Date		2024/09/07 10:30	2024/09/07 14:00		
COC Number		145606	145606		
	Units	SEE-GW	SER-GW	RDL	QC Batch
% MOISTURE	%	89	81	N/A	N/A
PARTICLE SIZE					
< -1 Phi (2 mm) †	%	100	100	0.10	2574468
< 0 Phi (1 mm) †	%	100	100	0.10	2574468
< +1 Phi (0.5 mm) †	%	99	100	0.10	2574468
< +2 Phi (0.25 mm) †	%	99	99	0.10	2574468
< +3 Phi (0.12 mm) †	%	98	99	0.10	2574468
< +4 Phi (0.062 mm) †	%	93	99	0.10	2574468
< +5 Phi (0.031 mm) †	%	80	96	0.10	2574468
< +6 Phi (0.016 mm) †	%	65	90	0.10	2574468
< +7 Phi (0.0078 mm) †	%	48	75	0.10	2574468
< +8 Phi (0.0039 mm) †	%	43	69	0.10	2574468
< +9 Phi (0.0020 mm) †	%	34	57	0.10	2574468
Gravel (>2mm) †	%	<0.10	<0.10	0.10	2574468
Sand (0.06-2mm) †	%	6.8	1.2	0.10	2574468
Silt (0.004-0.06mm) †	%	50	30	0.10	2574468
Clay (<0.004mm) †	%	43	69	0.10	2574468

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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GENERAL COMMENTS

Pet. Hydrocarbons (C10-C50) in soils: Analyses requested past holding time: NM0458
Revised version : C10-C50 was added for sample SEE-GW as requested by the client.

Revised version 3 : Addition of mercury and aluminium in both samples as requested by client.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2569527	CYU	Spiked Blank	Silicon (Si)	2024/09/21		99	%
2569527	CYU	Method Blank	Silicon (Si)	2024/09/21	<20		mg/kg
2569552	AKS	Spiked Blank	pH	2024/09/20		102	%
2569614	SXU	Spiked Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/09/20		99	%
2569614	SXU	Method Blank	Nitrogen ammonia (N-NH4+ and N-NH3)	2024/09/20	<5.0		mg/kg
2569657	BAG	QC Standard	Sulfur (S)	2024/09/20		98	%
2569657	BAG	Method Blank	Sulfur (S)	2024/09/20	<0.010		% g/g
2569734	ZZH	Spiked Blank	Bromide (Br-)	2024/09/22		97	%
			Chloride (Cl)	2024/09/22		99	%
			Nitrate (N) and Nitrite(N)	2024/09/22		98	%
			Sulfates (SO4)	2024/09/22		100	%
2569734	ZZH	Method Blank	Bromide (Br-)	2024/09/22	<1.0		mg/kg
			Chloride (Cl)	2024/09/22	<1.0		mg/kg
			Nitrate (N) and Nitrite(N)	2024/09/22	<1.0		mg/kg
			Sulfates (SO4)	2024/09/22	<5.0		mg/kg
2570879	CYU	Spiked Blank	Total Extractable Aluminum (Al)	2024/09/25		115	%
			Total Extractable Silver (Ag)	2024/09/25		91	%
			Total Extractable Arsenic (As)	2024/09/25		103	%
			Total Extractable Barium (Ba)	2024/09/25		103	%
			Total Extractable Boron (B)	2024/09/25		108	%
			Total Extractable Cadmium (Cd)	2024/09/25		99	%
			Total Extractable Chromium (Cr)	2024/09/25		103	%
			Total Extractable Copper (Cu)	2024/09/25		101	%
			Total Extractable Cobalt (Co)	2024/09/25		102	%
			Total Extractable Tin (Sn)	2024/09/25		112	%
			Total Extractable Iron (Fe)	2024/09/25		113	%
			Total Extractable Manganese (Mn)	2024/09/25		104	%
			Total Extractable Molybdenum (Mo)	2024/09/25		100	%
			Total Extractable Nickel (Ni)	2024/09/25		99	%
			Total Extractable Total phosphorous	2024/09/25		112	%
			Total Extractable Lead (Pb)	2024/09/25		104	%
			Total Extractable Selenium (Se)	2024/09/25		98	%
			Total Extractable Uranium (U)	2024/09/25		100	%
			Total Extractable Zinc (Zn)	2024/09/25		99	%
2570879	CYU	Method Blank	Total Extractable Aluminum (Al)	2024/09/25	<20		mg/kg
			Total Extractable Silver (Ag)	2024/09/25	<2.0		mg/kg
			Total Extractable Arsenic (As)	2024/09/25	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/09/25	<5.0		mg/kg
			Total Extractable Boron (B)	2024/09/25	<5.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/09/25	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/09/25	<2.0		mg/kg
			Total Extractable Copper (Cu)	2024/09/25	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/09/25	<2.0		mg/kg
			Total Extractable Tin (Sn)	2024/09/25	<5.0		mg/kg
			Total Extractable Iron (Fe)	2024/09/25	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/09/25	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/09/25	<2.0		mg/kg
			Total Extractable Nickel (Ni)	2024/09/25	<1.0		mg/kg
			Total Extractable Mercury (Hg)	2024/09/25	<0.050		mg/kg
			Total Extractable Total phosphorous	2024/09/25	<20		mg/kg
			Total Extractable Lead (Pb)	2024/09/25	<5.0		mg/kg

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Selenium (Se)	2024/09/25	<1.0		mg/kg
			Total Extractable Uranium (U)	2024/09/25	<5.0		mg/kg
			Total Extractable Zinc (Zn)	2024/09/25	<5.0		mg/kg
2572602	KME	Spiked Blank	Conductivity	2024/09/28		101	%
2572602	KME	Method Blank	Conductivity	2024/09/28	<0.020		mS/cm
2579402	KTR	Spiked Blank	1-Chlorooctadecane	2024/10/15		127	%
			Petroleum Hydrocarbons (C10-C50)	2024/10/15		81	%
2579402	KTR	Spiked Blank DUP	1-Chlorooctadecane	2024/10/15		125	%
			Petroleum Hydrocarbons (C10-C50)	2024/10/15		79	%
2579402	KTR	Method Blank	1-Chlorooctadecane	2024/10/15		125	%
			Petroleum Hydrocarbons (C10-C50)	2024/10/15	<100		mg/kg

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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VALIDATION SIGNATURE PAGE

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Michelina Cinquino, Analyst II

Marie-Claude Poupart, B.Sc., Chemist, Montreal, Team Lead

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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VALIDATION SIGNATURE PAGE(CONT'D)

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Appendix V. Benthic community analysis report

Montréal, le 14 mai 2025

Par courriel

TATA Steel Minerals Canada Limited
Pallav Sinha
1000, rue Sherbrooke Ouest, Suite 1120
Montréal (Québec) H3A 3G4

Objet : Suivi annuel des invertébrés benthiques, projet Goodwood — 2024

Réf. : PR185-52-24

Monsieur Sinha,

Nous avons le plaisir de vous transmettre le rapport relatif aux analyses menées par notre firme pour le projet mentionné en rubrique.

1 INTRODUCTION

Le programme de suivi des sédiments du projet minier Goodwood prévoit un suivi annuel des communautés d'invertébrés benthiques (CIB). Les lignes directrices du *Guide technique pour l'étude de suivi des effets sur l'environnement des mines de métaux* (ECCC, 2022) ont été utilisées dans la production du plan d'échantillonnage des CIB.

TATA Steel Minerals Canada (TSMC) a rencontré des difficultés lors du développement du programme d'échantillonnage des CIB dans le secteur du projet Goodwood. Ceci est dû au fait qu'il n'y a pas de cours d'eau permanent dans les environs. Ainsi, les sites d'échantillonnage se trouvent en cours d'eau permanent, le plus près possible des sites d'échantillonnage des sédiments, mais malgré tout relativement loin du point de rejet. L'exutoire du lac de la Frontière, « lac Fra », est un cours d'eau intermittent sur la majeure partie de son tracé. Il se jette dans un cours d'eau permanent sans nom. Ce dernier coule par la suite dans un milieu humide. Le suivi des CIB exposées à l'effluent (site BEE) a lieu en aval du point de jonction des deux cours d'eau.

2 MÉTHODOLOGIE

2.1 Échantillonnage de la communauté benthique

L'échantillonnage des CIB a eu lieu dans trois sites (Carte 1 de l'Annexe A) :

- La section permanente de la décharge du lac Fra est considérée comme site exposé (BEE), bien qu'elle soit située à environ 1 km en aval du lac Fra.
- Le site de référence BER1 est situé dans un cours d'eau sans nom parallèle et adjacent à la décharge du lac Fra.
- Le site de référence BER2 est situé au niveau de la décharge du lac Migration.

Pour chaque site, cinq stations ont été échantillonnées. À chaque station, six sous-échantillons ont été prélevés à l'aide d'un échantillonneur Hess (superficie de 0,086 m^2 ; 500 µm de maillage). La méthode consiste à frotter tout le substrat à l'intérieur de l'échantillonneur pendant 1 minute avec une brosse douce ou à la main pour permettre au matériel de s'écouler dans le filet de l'échantillonneur. Ces sous-échantillons sont ensuite combinés sur place pour former un échantillon composite. Cet échantillon composite est ensuite transféré dans un pot hermétique et conservé avec une solution d'alcool à 70 % pour une identification ultérieure en laboratoire.

2.2 Identification des invertébrés benthiques en laboratoire

L'identification des invertébrés benthiques est réalisée à l'aide des clés d'identification du ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs (MELCCFP) (Moisan, 2010) et celles de Merritt et coll. (2008). L'identification s'arrête à la famille pour les insectes (Hexapoda), à l'ordre pour les crustacés (Crustacea), à la sous-classe pour les oligochètes, les sangsues (Clitellata) et les acariens (Arachnida), et au phylum pour les nématodes (Nematoda).

Une méthode de sous-échantillonnage a été appliquée lorsque l'échantillon présentait un gros volume. Dans ce cas, l'échantillon est séparé en sous-échantillons de volume identique. Un minimum de 200 organismes doit être identifié afin de pouvoir ensuite appliquer une méthode de standardisation visant à remettre les abondances à l'échantillon entier.

2.3 Indices de communauté

Trois indices ont été utilisés pour analyser les CIB aux sites : la densité totale, l'équitabilité de Simpson et la richesse. Pour chaque paramètre, la taille d'échantillon (n), la moyenne, la médiane, l'écart-type, l'erreur type, le minimum et le maximum ont été calculés par site. De plus, la dissimilarité de Bray-Curtis (BC) a été utilisé pour représenter la différence entre toutes les communautés échantillonnées (Bray et Curtis, 1957)

2.3.1 Densité totale

La densité totale est la somme des spécimens d'invertébrés benthiques récoltés et identifiés par station, toutes catégories taxinomiques confondues, divisée par la surface d'échantillonnage. Puisque tous les échantillons composites couvrent la même superficie (0,344 m^2), l'abondance totale par échantillon est présentée (nombre d'invertébrés/station). Néanmoins, la proportion de l'échantillon composite traitée pour identifier et dénombrer les spécimens varie entre les stations. Par conséquent, l'abondance totale de chaque spécimen dénombrer par sous-échantillon a été ramenée proportionnellement à l'échantillon entier.

2.3.2 Richesse des taxons

La richesse (*S*) est le nombre total de taxons différents récoltés à chaque station.

2.3.3 Indice d'équitabilité de Simpson

L'indice d'équitabilité Simpson (*E*) est le ratio de l'indice de diversité Simpson (*D*) sur le maximum mathématique *D* d'un site donnée (D_{max}), comme le montre l'Équation 1. Pour calculer *D*, les proportions (*p*) des taxons (*i*) dans une communauté de richesse (*S*) sont mises au carré, additionnées puis divisées de 1 (Simpson, 1949).

$$\boldsymbol{E = \frac{D}{D_{max}} = \left(\sum_{i=1}^{S} p_i^2\right)^{-1} \times S^{-1}} \qquad \text{Équation 1}$$

2.3.4 Dissimilarité de Bray-Curtis

L'indice de dissimilarité de Bray-Curtis (*BC*) a également été utilisé pour représenter la différence entre toutes les communautés échantillonnées (Bray et Curtis, 1957). La dissimilarité entre les sites *a* et *b* est calculée à l'aide de l'Équation 2 où y_i est l'abondance des taxons en commun (*i*) entre les deux sites.

$$BC = \frac{\sum_{i=1}^{n} |y_{ia} - y_{ib}|}{\sum_{i=1}^{n} (y_{ib} + y_{ib})} \qquad \text{Équation 2}$$

2.3.5 Autres indicateurs

2.3.5.1 Diversité de Simpson

L'indice de diversité de Simpson (*D*) représente à la fois la proportion d'espèces (*p*) dans une communauté et le nombre d'espèces (*S*) dans celle-ci (Krebs, 2014). Comme pour les autres critères, la moyenne, la médiane, l'écart-type, l'erreur type, le minimum et le maximum ont été calculés. *D* est calculé en utilisant l'Équation 3.

$$D = 1 - \sum_{i=1}^{S} p_i^2$$ Équation 3

2.3.5.2 Présence, densité et proportions des taxons

La présence de taxons peut être utilisée dans plusieurs analyses lorsque le plan d'échantillonnage ne permet pas une approche basée sur la densité. Il peut être utile d'illustrer la richesse et les assemblages d'espèces dans une communauté.

La densité des taxons représente le nombre d'individus de chaque taxon à chaque site par m^2 et la proportion des taxons est la proportion de chaque taxon dans la communauté.

2.4 Analyses statistiques

Dans le cadre de cette analyse, les sites d'exposition (BEE) sont comparés à une CIB hypothétique médiane où l'abondance des taxons est la médiane d'abondance dans les échantillons de BER2 ou de BER1.

Afin de respecter le critère de normalité des données nécessaire aux analyses statistiques, les densités ont été transformées à l'aide de la logarithmique naturelle (Legendre et Gallagher, 2001).

L'ANOVA est l'analyse utilisée dans le cadre de cette étude afin de comparer les résultats des indices du site exposé (BEE) aux sites de références. Le seuil (*a*) établi pour déterminer si une différence est significative est établi à 0,1. Pour déterminer si un résultat significatif est biologiquement important, la taille d'effet critique (CES) est utilisée. Un minimum de deux fois l'écart-type du site de référence est requis pour que l'effet soit considéré d'importance (Environnement Canada, 2012). Finalement, pour déterminer si un résultat non significatif est dû à un trop petit échantillonnage, une analyse de la puissance est effectuée, à l'aide de la taille d'effet de Cohen (*d*) tel que présenté à l'Équation 4 où μ est la moyenne et σ est l'écart-type (Cohen, 1988).

$$d = \frac{|\mu_{BEE} - \mu_{BER2}|}{\sqrt{(\sigma_{BER2} + \sigma_{BEE})/2}}$$ Équation 4

Finalement, en ce qui concerne les taxons inconnus (individus immatures ou endommagés), ceux-ci ont été éliminés du jeu de données pour le calcul de dissimilarité de Bray-Curtis afin de ne pas introduire de biais liés à la redondance de certains taxons inconnus entre échantillons.

3 RÉSULTATS

Le prélèvement des échantillons a été effectué du 4 au 9 septembre 2024. Un reportage photographique de l'échantillonnage est présenté à l'Annexe B. Les fiches de caractérisation et de décompte des invertébrés benthiques sont présentées à l'Annexe C.

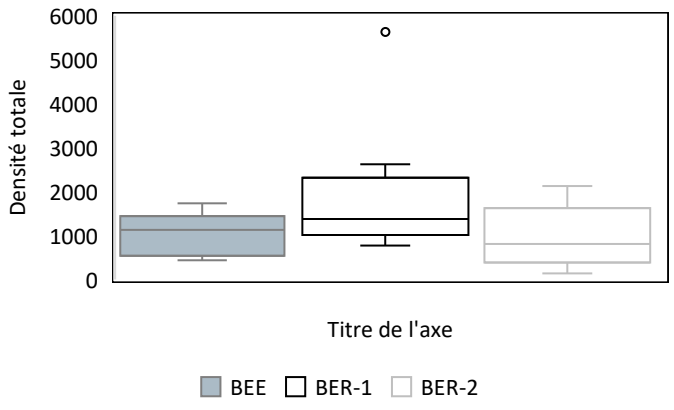
3.1 Densité totale

La densité totale des invertébrés benthiques au site BEE (1055 ± 504 spécimens) est plus faible qu'au site de référence BER1 (2112 ± 1842 spécimens), mais plus élevée qu'au site BER2 (967 ± 740 spécimens). Ces différences ne sont pas statistiquement significatives (Tableau 1). Cela représente une diminution moyenne de 50% et une augmentation de 9 % de la densité totale des invertébrés benthiques par rapport au site de référence BER1 et BER2 respectivement.

La différence entre le site BEE et les sites de référence BER1 et BER2 n'est biologiquement pas significative (inférieur aux CES).

Tableau 1 Densité totale des invertébrés benthiques par site

	Site	n	Médiane	Moyenne	Écart-type	Erreur type	Minimum	Maximum
Densité totale	**BEE**	6	1125	1055	504	206	433	1733
	BER1	6	1375	2112	1842	752	771	5628
	BER2	6	805	967	740	302	140	2121
ANOVA BEE vs BER1	**Valeur de *p***	0,20						
	Puissance	0,78 Grande						
ANOVA BEE vs BER2	**Valeur de *p***	0,81						
	Puissance	0,14 Faible						



Toutes les stations du site exposé (BEE) présentaient une densité totale plus faible que celles du site de référence BER1. Cependant, certaines stations du site BER2 présentaient une densité plus faible que celles du site BEE. En effet, la densité minimale observée au site de référence BER2 est de 140 individus comparativement à une densité minimale de 433 au site exposé BEE. De plus, le site de référence BER1 présente un écart-type plus élevé que les sites BER2 et BEE,

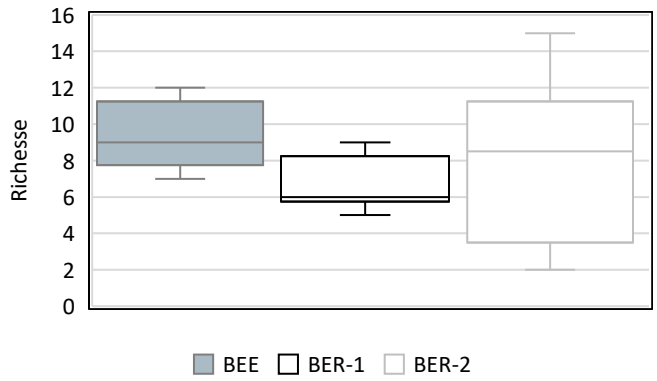
ce qui suggère que ce site de référence possède des habitats plus hétérogènes, avec certaines zones supportant une communauté plus abondante que d'autres (variabilité intrasite plus importante).

3.2 Richesse des taxons

La richesse des taxons diffère significativement entre le site exposé BEE et le site de référence BER1 (Tableau 2). Cependant, elle n'est pas statistiquement différente entre le site BEE et le site BER2. La puissance moyenne (0,38) suggère que le faible nombre d'échantillons n'est pas la cause des résultats non significatifs des comparaisons statistiques entre les sites BEE et BER2.

Tableau 2 Richesse des taxons d'invertébrés benthiques par site

	Site	n	Médiane	Moyenne	Écart-type	Erreur type	Minimum	Maximum
Richesse	BEE	6	9	9	2	1	7	12
	BER1	6	6	7	2	2	5	9
	BER2	6	9	8	5	1	2	15
ANOVA BEE vs BER1	Valeur de *p*	0,02 [a]						
	Puissance	-						
ANOVA BEE vs BER2	Valeur de *p*	0,53						
	Puissance	0,38 Moyenne						



Notes : a) Résultat significatif, $p < 0,1$

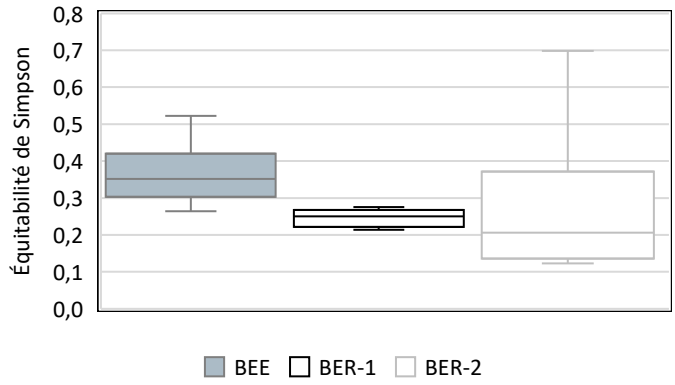
3.3 Équitabilité de Simpson

L'équitabilité de Simpson est significativement différente entre les sites BEE et BER1 (Tableau 3). Plus précisément, l'équitabilité de Simpson moyenne est significativement plus élevée au site BEE (0,37 ± 0,09) comparativement au site BER1 (0,25 ± 0,02). Toutefois, il n'y a aucune différence significative entre les sites BEE et BER2 (0,27 ± 0,22). Cela représente en moyenne une augmentation de 48 % de l'équitabilité de Simpson entre les sites BEE et BER1. La différence entre les sites BEE et BER1 est biologiquement significative (effet positif, supérieur au CES). La différence entre les sites BEE et BER2 n'est pas statistiquement significative. La puissance moyenne (0,56) de l'analyse suggère que le faible nombre d'échantillons n'est pas la cause de ce résultat non significatif.

En somme, l'équitabilité de Simpson pour les trois sites est relativement faible (près de 0), suggérant que l'abondance de chaque espèce est relativement inégale à l'intérieur des communautés de chaque station (dominance de certaines espèces).

Tableau 3 Équitabilité de Simpson des taxons d'invertébrés benthiques par site

	Site	n	Médiane	Moyenne	Écart-type	Erreur type	Minimum	Maximum
Équitabilité de Simpson	BEE	6	0,35	0,37	0,09	0,04	0,26	0,52
	BER1	6	0,25	0,25	0,02	0,01	0,21	0,28
	BER2	6	0,21	0,27	0,22	0,09	0,12	0,70
ANOVA BEE vs BER1	Valeur de *p*	0,01 [a]						
	Puissance	-						
ANOVA BEE vs BER2	Valeur de *p*	0,35						
	Puissance	0,56 Moyenne						



Notes : a) Résultat significatif, p < 0,1

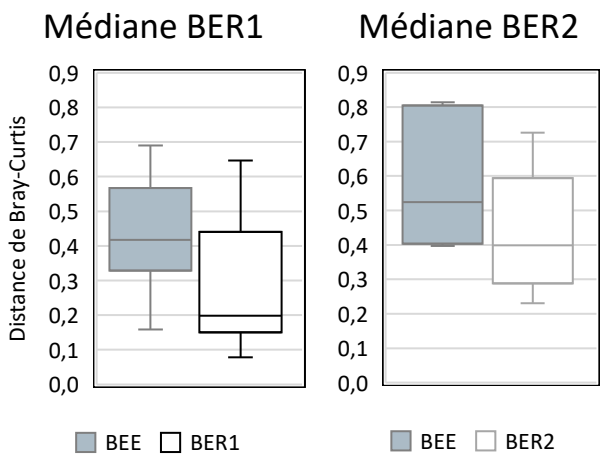
3.4 Dissimilarité de Bray-Curtis

Selon l'indice de Bray-Curtis, la dissimilarité entre la communauté du site BEE et la communauté médiane du site BER1 (BER1m ; 0,43 ± 0,18) n'est pas significativement différente à celle opposant les stations de BER1 à BER1m (0,28 ± 0,20 ; Tableau 4). De la même manière, la dissimilarité entre la communauté du site BEE et la médiane de référence BER2 (BER2m ; 0,58 ± 0,20) n'est pas significativement différente à celle entre BER2 et BER2m (0,44 ± 0,18). En d'autres termes, la communauté d'invertébrés benthiques du site BEE est similaire à celle des sites de référence BER1 et BER2.

Les différences entre le site exposé BEE et les sites de références BER1 et BER2 ne sont pas biologiquement significatif (inférieur au CES). Les grandes puissances (0,81; 0,76) suggèrent que le nombre d'échantillons n'est pas la cause des résultats non significatifs.

Tableau 4 Dissimilarité de Bray-Curtis

	Sites	n	Médiane	Moyenne	Écart-type	Erreur type	Minimum	Maximum
Dissimilarité	BEE-BER1m	6	0,42	0,43	0,18	0,07	0,16	0,69
	BER1-BER1m	6	0,20	0,28	0,20	0,08	0,08	0,65
	BEE-BER2m	6	0,52	0,58	0,20	0,08	0,40	0,81
	BER2-BER2m	6	0,40	0,44	0,18	0,07	0,23	0,73
T-test BEE vs BER1	Valeur de *p*	0,19						
	Puissance	0,81 Grande						
T-test BEE vs BER2	Valeur de *p*	0,22						
	Puissance	0,76 Grande						



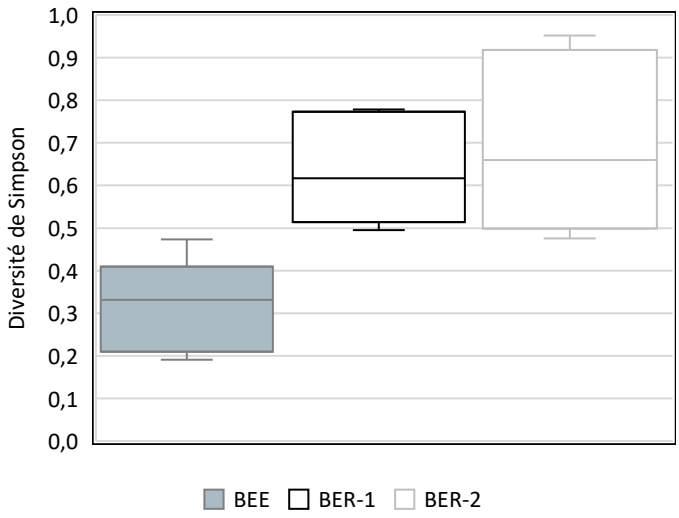
3.5 Autres indicateurs

3.5.1 Diversité de Simpson

La diversité de Simpson diffère significativement entre le site BEE et les sites de références BER1 et BER2 (Tableau 5). De plus, la diversité de Simpson au site BEE est biologiquement différente à celle du site de référence BER2.

Tableau 5 Diversité de Simpson des taxons d'invertébrés benthiques par site

	Site	n	Médiane	Moyenne	Écart-type	Erreur type	Minimum	Maximum
Diversité de Simpson	BEE	6	0,33	0,32	0,11	0,04	0,19	0,47
	BER1	6	0,62	0,63	0,12	0,05	0,50	0,78
	BER2	6	0,66	0,69	0,20	0,08	0,48	0,95
ANOVA BEE vs BER1	Valeur de *p*	<0.001 [a]						
	Puissance	-						
ANOVA BEE vs BER2	Valeur de *p*	0,002 [a]						
	Puissance	-						



Notes : a) Résultat significatif, $p < 0,1$

3.5.2 Abondance de chaque taxon

Les plus hautes abondances observées sont pour la famille des *Chironomidae* aux trois sites même si aux stations de BER1, les abondances de cette famille sont bien plus hautes qu'aux sites BEE et BER2 (Tableau 6). Les taxons sous dominants au site BEE sont les acariens et Simuliidae. Aux sites de BER1, ce sont les Simuliidae qui dominent le reste des CIB ainsi que l'ordre des plécoptères. Aux sites de BER2, les acariens représentent le taxon sous dominant.

Tableau 6 Abondance de chaque taxon

SITE	BEE						BER-1						BER-2					
STATION	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
ARACHNIDA																		
ACARINA	56	63	132	48	103	88	400	120	36	0	38	21	3	34		4	7	
CLITELLATA																		
OLIGOCHAEATA										1			3			5	20	2
CRUSTACEA																		
CLADOCERA																6	0	2
COPEPODA		1														7	17	2
INSECTA																		
COLEOPTERA																		
Dysticidae																	7	
DIPTERA																		
Ceratopogonidae													12			7	9	6
Chironomidae	32	38	196	154	164	304	1328	302	679	273	380	232	712	119	40	111	293	478
Diptère non identifié			2	2	1	2										1	1	
Nymphomyiidae			4															
Simuliidae	7	25		324	15	18	160	10	171	13	30	3		8				
Tipulidae	20	21	16	6	5	8	8	10	3	1	2	4		7		2		
EPHEMEROPTERA																		
Baetidae	1																	
Ephemerellidae			2											1				
Éphéméroptère non identifié														1				
HEMIPTERA																		
Corixidae															8	3		
ODONATA																		
Corduliidae																4	9	6
Gomphidae																		2
PLECOPTERA																		
Capnidae	2																	
Chloroperlidae	9	20																
Leuctridae	4		22	10	13	8	8											
Nemouridae	14	25	70	52	9	24	8	4	6	16	28	5		1		2		
Plécoptère non identifié							8											
TRICHOPTERA																		
Hydroptilidae																1		
Leptoceridae																	3	
Limnephilidae	2	1	12			10										1		
Phryganeidae					1													
Polycentropodidae																4		2
Trichoptère non identifié			2					2										

SITE	BEE						BER-1						BER-2					
STATION	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
MOLLUSCA																		
BIVALVIA																		
Sphaeridae																4		2
Lymnaidae	1																	
Physidae		1																
NEMATODA																		
Nématode non identifié	1	1	4				16	10	6	5	6			3			13	
AUTRE																		
Espèce inconnue								2										
Insecte terrestre		5	2	3	1	3	4	8	1		3		1	1		3		
TOTAL	**149**	**201**	**464**	**599**	**313**	**465**	**1940**	**468**	**902**	**311**	**487**	**265**	**731**	**175**	**48**	**165**	**380**	**502**

5 CONCLUSION

Comparaison au site de référence BER1. L'indice de richesse pour le site exposé BEE montre une différence statistiquement significative avec le site BER1 (effet positif). L'indice d'équitabilité de Simpson est biologiquement différent entre les sites BEE et BER1. La densité et l'indice de dissimilarité de Bray-Curtis ne présentent aucune différence significative entre les différents sites. Finalement, la diversité de Simpson est significativement différente entre le site BEE et BER1 (Tableau 7). Ce résultat n'a pas été observé lors des années précédentes et peut s'expliquer par une taille d'échantillon plus représentative (6 échantillons en 2024 contre 5 en 2022 et 2023) ou par une variation interannuelle.

Tableau 7 Résumé des derniers suivis, comparaison avec le site de référence BER1

Indice	Année de suivi					
	2019 [a]	2020 [a]	2021 [a]	2022	2023	2024
Taille d'échantillon	---	---	---	5	5	6
Principaux						
Densité/abondance	---	---	---	**SS-**	**BS-**	NS
Richesse	---	---	---	NS	NS	**SS+**
Équitabilité de Simpson	---	---	---	NS	NS	**BS-**
Dissimilarité de Bray-Curtis	---	---	---	**SS-**	**BS-**	NS
Autre indicateur						
Diversité de Simpson	---	---	---	**BS-**	NS	**SS-**

Note a. En 2019, 2020 et 2021, le site considéré comme exposé était en fait le site de référence BER1. Ceci explique que la communauté était plus dense et équitable qu'au témoin certaines années.

BS = Biologiquement significatif ; **NS** = non significatif ; **SS** = statistiquement significatif ; **-** = effet négatif ; **+** = effet positif.

Comparaison au site de référence BER2. La richesse pour le site exposé BEE n'est pas significativement différente par rapport au site BER2. Aucune différence statistique ou biologique n'a été relevée pour les indices de richesse et de l'équitabilité de Simpson. Finalement, la diversité de Simpson du site BER2 est pas statistiquement et biologiquement différente de celle du site BEE. Aucune différence biologiquement ou statistiquement significative a été observé pour la densité totale entre les différents sites. L'indice de dissimilarité de Bray-Curtis ne présente aucune différence significative entre les différents sites. Ce résultat n'a pas été observé lors des années précédentes et peut s'expliquer par une taille d'échantillon plus représentative (6 échantillons en 2024 contre 5 en 2022 et 2023) ou par une variation interannuelle.

À la suite de l'analyse de puissance, une puissance faible a seulement été observée lors de la comparaison de la densité totale entre les sites BEE et BER2. Ainsi, il est recommandé de conserver le nombre de stations à six par site.

Tableau 8 Résumé des derniers suivis, comparaison avec le site de référence BER2

Indice	Année de suivi					
	2019 [a]	2020 [a]	2021 [a]	2022	2023	2024
Taille d'échantillon	---	---	---	5	5	6
Principaux						
Densité/abondance	---	---	---	NS	**SS-**	NS
Richesse	---	---	---	**BS-**	NS	NS
Équitabilité de Simpson	---	---	---	NS	BS+	NS
Dissimilarité de Bray-Curtis	---	---	---	**SS-**	**BS**	NS
Autre indicateur						
Diversité de Simpson	---	---	---	**BS-**	NS	**BS-**

Note a. En 2019, 2020 et 2021, le site considéré comme exposé était en fait le site de référence BER1. Ceci explique que la communauté était plus dense et équitable qu'au témoin certaines années.

BS = Biologiquement significatif ; **NS** = non significatif ; **SS** = statistiquement significatif ; **-** = effet négatif ; **+** = effet positif.

Espérant le tout conforme à vos attentes, veuillez recevoir, Monsieur, nos plus cordiales salutations.

Laurent Fraser
Directeur de projet - Milieu naturel

6 ASSURANCE QUALITÉ

Groupe GEOS dispose d'un système interne de contrôle de la qualité basé sur la vérification et l'approbation de tout concept et production de documents par un professionnel senior. Il tient notamment compte de la responsabilité du management, du contrôle de la documentation et des données, de la formation continue du personnel, ainsi que de l'assurance qualité pour les produits livrables. Ce système inclut également un contrôle assidu des travaux de terrain et des mesures de prévention et de sécurité spécifiques au projet.

ANNEXE A
FIGURES

Carte 1 Échantillonnage du benthos/benthos monitoring

W:_CartoContrats\PR185_TATASteel\PR185-49-21_Enviro_DSO_2021\Workspaces\Goodwood_Benthos\GH-1511_PR185-49-21_Fig1_StationsEchantBenthos.mxd

Gisement Goodwood *Deposit*

QUÉBEC/*QUEBEC*

TERRE-NEUVE-ET-LABRADOR/
LABRADOR AND NEWFOUNDLAND

BER1

BEE

BER2

Lac de la Frontière Lake

Lac Migration Lake

Gisement/*Deposit*
Milieu humide/*Wetland*
Courbe de niveau/*Contour interval* (15 m)
Frontière provinciale/*Provincial border*

Infrastructures
Fosse/*Pit*
Halde à mort-terrain/*Overburden stockpile*
Halde à stériles/*Waste dump*
Carrière inactive/*Inactive quarry*

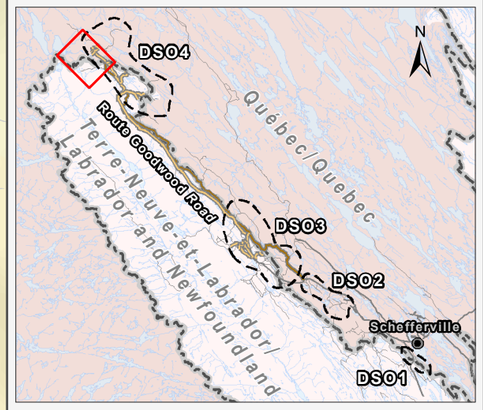
Routes d'accès/*Access roads*
Route de halage/*Haul Road*
Route de contournement/*Bypass road*
Route d'accès/*Access road*

Hydrographie/*Hydrography*
Cours d'eau permanent/*Permanent watercourse*
Cours d'eau intermittent/*Intermittent watercourse*
Chenal torrentiel/*Storm runoff*
Cours d'eau disparaissant/*Disappearing Stream*
Plan d'eau/*Waterbody*

Stations d'échantillonnage de benthos/*Benthos monitoring stations*
Station d'exposition/*Exposure station*
Station de référence/*Reference station*

Échelle/*Scale* : 1/15 000 Projection : NAD 1983 UTM Zone 19N

0 200 400 600 800 m



IDENTIFICATION DES INVERTÉBRÉS BENTHIQUES — PROJET GOODWOOD — 2024/
GOODWOOD PROJECT – BENTHIC INVERTEBRATE IDENTIFICATION — 2024

TATA

Sources :
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TATA Steel Minerals Canada Limited, Mining Components and Roads
MERN, Limites provinciales, 2018/
MERN, Provincial Boundary, 2018

Stations d'échantillonnage de benthos (aires d'étude)/*Benthos monitoring stations (study areas)*

Groupe Hemispheres

FICHIER/*FILE*, PROJET/*PROJECT*, DATE, AUTEUR/*AUTHOR* :
GH-1511 , PR185-49-21, 2023-03-30, fxlafortune

Figure 1

ANNEXE B
REPORTAGE PHOTOGRAPHIQUE

Aire d'étude BEE	
Amont	**Aval**
Rive gauche	**Rive droite**

Substrat	---
Aire d'étude BER1	
Amont	**Aval**

<table>
<tr><td>

Rive gauche</td><td>

Rive droite</td></tr>
<tr><td>

Substrat</td><td>---</td></tr>
<tr><td colspan="2">Aire d’étude BER2</td></tr>
<tr><td>

Amont</td><td>

Aval</td></tr>
</table>

 Rive gauche	 **Rive droite**
 Substrat	---

ANNEXE C
FICHES

BENTHOS
HABITAT, COURS D'EAU

GROUPE GEOS

PROJET	PR185-51-23-52-24	DATE	24/09/08	MÉTÉO	Brumeux
ÉQUIPE	AC, FJ, TD	HEURE	09:20	TEMP	15 °C
LOCALISATION	Schefferville / TATA			NUAGES	100 %
COURS D'EAU	—	# TRONÇON	BEE	GPS DÉBUT	—
				GPS FIN	—

GEOGRAPH

Utilisation du sol avoisinant (X si présent et étoile principal)

Forêt	X	Agriculture	
Exploitation Forestière		Commercial ou industriel	
Exploitation minière		Résidentiel	
Champs ou pâturages		Autre :	

HABITATS

Types d'habitat présents dans le tronçon (X si présent)

Seuil		Rapide	X	Droit		Fosse		Autre:	

Couvert forestier (canopée au dessus du cours d'eau)

0%		<25%		<50%	X	<75%		<100%		100%	

Couvert de macrophytes (pas algues ou mousses)

0%	X	<25%		<50%		<75%		<100%		100%	

Végétation riveraine (X si présent et étoile principal)

Herbacées	X	Arbustes	X	Arbres feuillus		Conifères	X

Couvert de périphyton

Roches non glissantes, pas de couleur évidente, couche <0.5mm	X
Roche légèrement glissante, jaune-brun à vert clair, couche <1mm	
Roches visqueuses, touffes d'algues vert-brun, couche <5mm	
Roches très glissantes, algues s'enlèvent avec l'ongle, grand nombre de touffe, couche <20mm	
Majorité des roches couvert d'un tapis d'algues, masse algale peut prendre la forme de longues bandes. >20mm	

SUBSTRAT

Catégorie de taille des particules

MO		2 %	Ca-gros	<6.4cm	15	%
Sa-f, Li, Ar	<0.1cm	1 %	G-petit	<12.8cm	15	%
Sa-gros	<0.2cm	0 %	G-gros	<25.6cm	70	%
Gravier	<1.6cm	16 %	Bloc	>25.6cm	15	%
Ca-petit	<3.2cm	15 %	RM		2	%

Estimation du comblement (enfouissement) des particules

Entierement comble	0 %	Comblé à 25%	10 %
Comblé à 75%	0 %	Non comblé	90 %
Comblé à 50%	0 %		%

Matériaux interstitiel (de comblement) (cocher plusieurs)

MO		Gravier	X	G-petit	
Sa-f, Li, Ar		Ca-petit		G-gros	
Sa-gros		Ca-gros		Bloc	

MESURE DU DÉBIT

Mesure du débit - À la règle (méthode CABIN)

	1	2	3	4	5	moy
Distance de la rive (m)						X
Prof en courant P1 (cm)						
Prof stagnant P2 (cm)						X

Mesure du débit - Autre méthodes

	1	2	3	4	5	moy
Courantomètre	—	—	—	—	—	—
Objet flotant (sur 1 m)	0.05s	0.1s				0.075s

Mesure de la pente

Méthode		Pente (% ou °)	

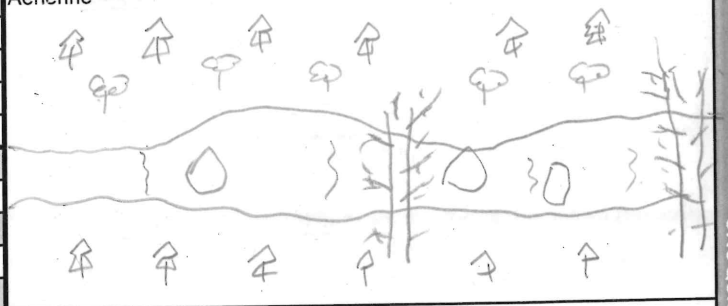
PHOTO

Amont	X	Rive G.	X	Substrat	X
Aval	X	Rive D.	X	Autre:	
Autre:		Autre:		Autre:	

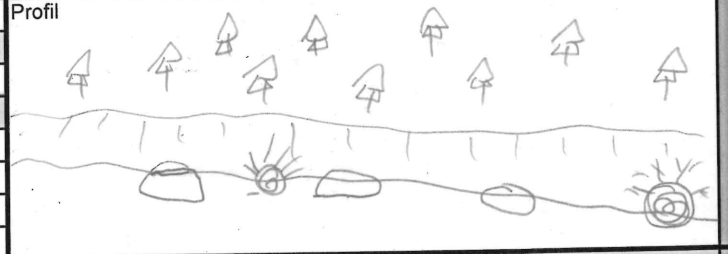
SIGNATURE

CROQUIS

Aérienne



Profil



EAU

Physicochimie *in situ*

Heure	09:20	Sonde	H198129
Température de l'air	15	Conductivité	46
Température de l'eau	3.3	Oxygène dissous (mg/L)	—
pH	6.87	Turbidité	limpide

ÉCHANTILLONNAGE

Habitat échantillonné (sélectionner 1)

Seuils		Rapides	X	Droits / run		Autre:	

Description de l'échantillonnage

Matériel d'échantillonnage	HESS	Nombre de pots	6
Durée de l'échantillonnage	1 min	Profondeur typique	10 cm
Tamisage sur place?	oui	Agent conservation	Alcohol 90%
Si oui, débris gardés pour CQ?			

ÉCHANTILLON EAU/SED.

ID	Nb. Pots	Matrice	Description / paramètre
BEE-A	1 sac		
BEE-B	1 sac		
BEE-C	1 sac		
BEE-D	1 sac		
BEE-E	1 sac		
BEE-F	1 sac		

NOTES ET COMMENTAIRES

PAGE / TOTAL

BENTHOS
HABITAT, COURS D'EAU

GROUPE GEOS

PROJET	PR185-51-23	DATE	24/09/06	MÉTÉO	Nuageux, brume
ÉQUIPE	AC, FJ, TD	HEURE	9h30	TEMP	7
LOCALISATION	Scheffenville / Tata			NUAGES	100 %
COURS D'EAU		# TRONÇON	BER-1	GPS DÉBUT	
				GPS FIN	

GEOGRAPH

Utilisation du sol avoisinant (X si présent et étoile principal)

Forêt	X	Agriculture	
Exploitation Forestière		Commercial ou industriel	
Exploitation minière	X	Résidentiel	
Champs ou pâturages		Autre :	

HABITATS

Types d'habitat présents dans le tronçon (X si présent)

Seuil		Rapide	X	Droit		Fosse		Autre:	

Couvert forestier (canopée au dessus du cours d'eau)

0%		<25%	X	<50%		<75%		<100%		100%	

Couvert de macrophytes (pas algues ou mousses)

0%	X	<25%		<50%		<75%		<100%		100%	

Végétation riveraine (X si présent et étoile principal)

Herbacées		Arbustes	X	Arbres feuillus		Conifères	X

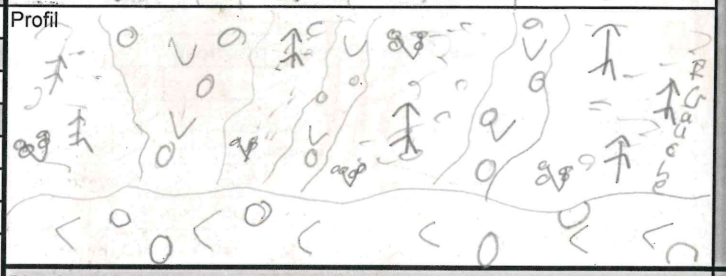
Couvert de périphyton

Roches non glissantes, pas de couleur évidente, couche <0.5mm	
Roche légèrement glissante, jaune-brun à vert clair, couche <1mm	X
Roches visqueuses, touffes d'algues vert-brun, couche <5mm	
Roches très glissantes, algues s'enlèvent avec l'ongle, grand nombre de touffe, couche <20mm	
Majorité des roches couvert d'un tapis d'algues, masse algale peut prendre la forme de longues bandes. >20mm	

CROQUIS

Aérienne

Profil



EAU

Physicochimie *in situ*

Heure	10h25	Sonde	H198129
Température de l'air	?	Conductivité	53 µS
Température de l'eau	1,8	Oxygène dissous (mg/L)	
pH	7,96	Turbidité	limpide

SUBSTRAT

Catégorie de taille des particules

MO		%	Ca-gros	<6.4cm	2,5	%
Sa-f, Li, Ar	<0.1cm	%	G-petit	<12.8cm	2,5	%
Sa-gros	<0.2cm	5 %	G-gros	<25.6cm	2,5	%
Gravier	<1.6cm	5 %	Bloc	>25.6cm	60	%
Ca-petit	<3.2cm	2,5 %	RM		10	%

Estimation du comblement (enfouissement) des particules

Entierement comble	%	Comblé à 25%	10	%
Comblé à 75%	%	Non comblé		%
Comblé à 50%	%			%

Matériaux interstitiel (de comblement) (cocher plusieurs)

MO		Gravier	X	G-petit	
Sa-f, Li, Ar		Ca-petit		G-gros	
Sa-gros	X	Ca-gros		Bloc	

ÉCHANTILLONNAGE

Habitat échantillonné (sélectionner 1)

Seuils		Rapides	X	Droits / run		Autre:	

Description de l'échantillonnage

Matériel d'échantillonnage	Hess	Nombre de pots	6
Durée de l'échantillonnage	24 min	Profondeur typique	27cm
Tamisage sur place?	oui	Agent conservation	70%
Si oui, débris gardés pour CQ?	Hesse		

ÉCHANTILLON EAU/SED.

ID	Nb. Pots	Matrice	Description / paramètre
BER1-A	1 + 1 sac		
BER1-B	1 + 1 sac		
BER1-C	1 + 1 sac	1	
BER1-D	1 + 1 sac	1	
BER1-E	1 + 1 sac	1	
BER1-F	1 + 1 sac	1	

MESURE DU DEBIT

Mesure du débit - À la règle (méthode CABIN)

	1	2	3	4	5	moy
Distance de la rive (m)						X
Prof en courant P1 (cm)						
Prof stagnant P2 (cm)						X

Mesure du débit - Autre méthodes

	1	2	3	4	5	moy
Courantomètre						
Objet flotant (sur 1 m)	1 s.	2 s.	2 s.	1,5 s.	0,5 s.	

Mesure de la pente

Méthode		Pente (% ou °)	10 %

NOTES ET COMMENTAIRES

Beaucoup de mousse

PHOTO

Amont		Rive G.		Substrat	
Aval		Rive D.		Autre:	
Autre:		Autre:		Autre:	

SIGNATURE

BENTHOS
HABITAT, COURS D'EAU

GROUPE GEOS

ID

PROJET	PR185-51-23	DATE	05/09/24	MÉTÉO	Nuageux, pluie intermittente
ÉQUIPE	AC, FJ, TD	HEURE	14:40	TEMP	15 °C
LOCALISATION	Scheffenville			NUAGES	100 %
COURS D'EAU	Migration	# TRONÇON	BER2	GPS DÉBUT	
				GPS FIN	

GEOGRAPH

Utilisation du sol avoisinant (X si présent et étoile principal)			
Forêt	✱	Agriculture	
Exploitation Forestière		Commercial ou industriel	
Exploitation minière	X	Résidentiel	
Champs ou pâturages		Autre : Toundra	

HABITATS

Types d'habitat présents dans le tronçon (X si présent)											
Seuil		Rapide		Droit	X	Fosse		Autre:			

Couvert forestier (canopée au dessus du cours d'eau)											
0%	X	<25%		<50%		<75%		<100%		100%	

Couvert de macrophytes (pas algues ou mousses)											
0%	X	<25%		<50%		<75%		<100%		100%	

Végétation riveraine (X si présent et étoile principal)							
Herbacées	✱	Arbustes	X	Arbres feuillus	X	Conifères	X

Couvert de périphyton	
Roches non glissantes, pas de couleur évidente, couche <0.5mm	
Roche légèrement glissante, jaune-brun à vert clair, couche <1mm	X
Roches visqueuses, touffes d'algues vert-brun, couche <5mm	
Roches très glissantes, algues s'enlèvent avec l'ongle, grand nombre de touffe, couche <20mm	
Majorité des roches couvert d'un tapis d'algues, masse algale peut prendre la forme de longues bandes. >20mm	

SUBSTRAT

Catégorie de taille des particules							
MO		35 %	Ca-gros	<6.4cm	5 %		
Sa-f, Li, Ar	<0.1cm	%	G-petit	<12.8cm	25 %		
Sa-gros	<0.2cm	%	G-gros	<25.6cm	10 %		
Gravier	<1.6cm	10 %	Bloc	>25.6cm	10 %		
Ca-petit	<3.2cm	5 %	RM		%		

Estimation du comblement (enfouissement) des particules			
Entierement comble	%	Comblé à 25%	%
Comblé à 75%	15 %	Non comblé	%
Comblé à 50%	10 %		%

Matériaux interstitiel (de comblement) (cocher plusieurs)					
MO		Gravier	X	G-petit	
Sa-f, Li, Ar		Ca-petit	X	G-gros	
Sa-gros		Ca-gros	X	Bloc	

MESURE DU DEBIT

Mesure du débit - À la règle (méthode CABIN)						
	1	2	3	4	5	moy
Distance de la rive (m)						X
Prof en courant P1 (cm)						
Prof stagnant P2 (cm)						X

Mesure du débit - Autre méthodes						
	1	2	3	4	5	moy
Courantomètre						
Objet flotant (sur 1 m)	0	0	30s	0	0	

Mesure de la pente			
Méthode		Pente (% ou °)	2

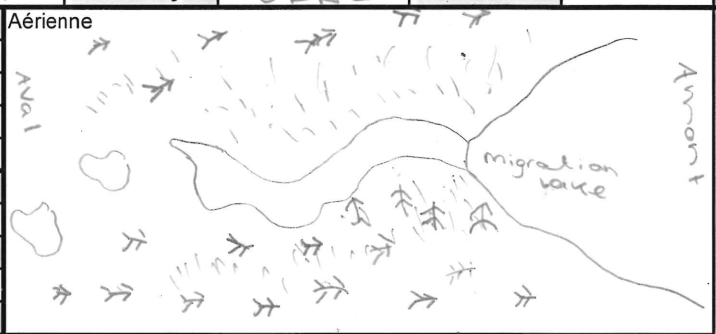
PHOTO

Amont	✓	Rive G.	✓	Substrat	✓
Aval	✓	Rive D.	✓	Autre:	
Autre:		Autre:		Autre:	

SIGNATURE

CROQUIS

Aérienne



Profil

EAU

Physicochimie *in situ*			
Heure	14:50	Sonde	H198129
Température de l'air	15	Conductivité	141 µS
Température de l'eau	14,2	Oxygène dissous (mg/L)	—
pH	5,77	Turbidité	Limp.

ÉCHANTILLONNAGE

Habitat échantillonné (sélectionner 1)										
Seuils		Rapides		Droits / run	X	Autre:				

Description de l'échantillonnage			
Matériel d'échantillonnage	Hess	Nombre de pots	5
Durée de l'échantillonnage	2h35	Profondeur typique	10 cm
Tamisage sur place?	oui	Agent conservation	70%
Si oui, débris gardés pour CQ?			

ECHANTILLON EAU/SED.

ID	Nb. Pots	Matrice	Description / paramètre
BER2-A	1		
BER2-B	1		
BER2-C	2		
BER2-D	1		

NOTES ET COMMENTAIRES

Poisson: forme cyprénidé, ligne noire tout le corps

CE devient des pools en amont niveau + bas que l'an dernier

Pas vraiment de débit

BENTHOS
HABITAT, COURS D'EAU

GROUPE GEOS

ID

PROJET	PR185-51-23	DATE	07/09/2024	MÉTÉO	nuageux
ÉQUIPE	AC, FJ, TO	HEURE	14:30	TEMP	21 °C
LOCALISATION	Scheffeville			NUAGES	100 %
COURS D'EAU	BER2	# TRONÇON	BER2 - EF	GPS DÉBUT	
				GPS FIN	

GEOGRAPH

Utilisation du sol avoisinant (X si présent et étoile principal)

Forêt	X	Agriculture	
Exploitation Forestière		Commercial ou industriel	
Exploitation minière	X	Résidentiel	
Champs ou pâturages		Autre :	

HABITATS

Types d'habitat présents dans le tronçon (X si présent)

Seuil		Rapide		Droit		Fosse		Autre: Pool isolé	X

Couvert forestier (canopée au dessus du cours d'eau)

0%		<25%	X	<50%		<75%		<100%		100%	

Couvert de macrophytes (pas algues ou mousses)

0%		<25%	X	<50%		<75%		<100%		100%	

Végétation riveraine (X si présent et étoile principal)

Herbacées	X	Arbustes	X	Arbres feuillus		Conifères	X

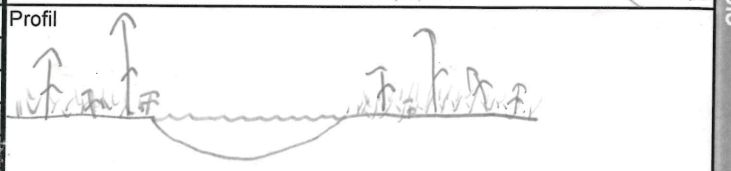
Couvert de périphyton

Roches non glissantes, pas de couleur évidente, couche <0.5mm	X
Roche légèrement glissante, jaune-brun à vert clair, couche <1mm	
Roches visqueuses, touffes d'algues vert-brun, couche <5mm	
Roches très glissantes, algues s'enlèvent avec l'ongle, grand nombre de touffe, couche <20mm	
Majorité des roches couvert d'un tapis d'algues, masse algale peut prendre la forme de longues bandes. >20mm	

CROQUIS

Aérienne

Profil



SUBSTRAT

Catégorie de taille des particules

MO		50	%	Ca-gros	<6.4cm		%
Sa-f, Li, Ar	<0.1cm	20	%	G-petit	<12.8cm		%
Sa-gros	<0.2cm	10	%	G-gros	<25.6cm		%
Gravier	<1.6cm	20	%	Bloc	>25.6cm		%
Ca-petit	<3.2cm		%	RM			%

Estimation du comblement (enfouissement) des particules

Entierement comble	100 %	Comblé à 25%	%
Comblé à 75%	%	Non comblé	%
Comblé à 50%	%		%

Matériaux interstitiel (de comblement) (cocher plusieurs)

MO	X	Gravier	X	G-petit	
Sa-f, Li, Ar	X	Ca-petit		G-gros	
Sa-gros	X	Ca-gros		Bloc	

MESURE DU DÉBIT

Mesure du débit - À la règle (méthode CABIN)

	1	2	3	4	5	moy
Distance de la rive (m)						X
Prof en courant P1 (cm)						
Prof stagnant P2 (cm)						X

Mesure du débit - Autre méthodes

	1	2	3	4	5	moy
Courantomètre						
Objet flotant (sur 1 m)						

Mesure de la pente

Méthode		Pente (% ou °)	0 %

PHOTO

Amont	X	Rive G.	X	Substrat	X
Aval	X	Rive D.	X	Autre:	
Autre:		Autre:		Autre:	

SIGNATURE

EAU

Physicochimie *in situ*

Heure	14:55	Sonde	Hanna 129
Température de l'air	21	Conductivité	6 µS
Température de l'eau	12.8	Oxygène dissous (mg/L)	\
pH	5.32	Turbidité	Turbide

ÉCHANTILLONNAGE

Habitat échantillonné (sélectionner 1)

Seuils		Rapides		Droits / run		Autre: Pool isolé	X

Description de l'échantillonnage

Matériel d'échantillonnage	Hess	Nombre de pots	3
Durée de l'échantillonnage	8 min	Profondeur typique	50cm
Tamisage sur place?	non	Agent conservation	70%
Si oui, débris gardés pour CQ?	\		ethanol

ÉCHANTILLON EAU/SED.

ID	Nb. Pots	Matrice	Description / paramètre
BER2-E	1	sédiment	Benthos
BER2-F	2	sédiment	Benthos

NOTES ET COMMENTAIRES

ATTENTION : sédiments pour BER2-E sont les mêmes que pour BER2-ABCD. Seulement BER2-F est différent

BER2-EF isolé, deux pools avec amont et aval complètement secs

ANNEXE D
RÉFÉRENCES

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ANNEXE E
PORTÉE ET LIMITATIONS

Ce document est publié conformément et sous réserve d'un accord entre Groupe GEOS inc. et TATA Steel Minerals Canada (TSMC) pour lequel il a été préparé. Il est limité aux questions qui ont été soulevées par TSMC dans les documents d'appel d'offres et préparé en utilisant les niveaux de compétence et de diligence normalement exercés par des scientifiques en environnement dans la préparation d'un tel document. Ce document est destiné à être lu comme un tout et des sections ou des parties ne doivent donc pas être lues, utilisées ou invoquées hors de leur contexte. Le document est confidentiel et la propriété de TSMC. La reproduction de ce document en entier ou en partie est autorisée sous réserve de faire référence à Groupe GEOS comme en étant l'auteur.

Ce rapport fait état des observations et données recueillies par Groupe GEOS dans le but d'analyser les impacts environnementaux du projet Goodwood. Nous rappelons l'importance de conserver l'intégralité des faits et propos rapportés, de même que l'analyse et les conclusions présentées dans ce rapport.

Lors de la préparation de ce document, Groupe GEOS a suivi une méthodologie et des procédures et pris les précautions appropriées au degré d'exactitude visé, en se basant sur ses compétences professionnelles en la matière et avec les précautions qui s'imposent. Groupe GEOS est d'opinion que les recommandations issues de ce rapport doivent être considérées comme valides avec une marge d'erreur raisonnable pour ce type d'étude. À moins d'indication contraire, Groupe GEOS n'a pas contrevérifié les hypothèses, données et renseignements en provenance de TSMC et autres sources sur lesquels peut être fondée son opinion. Groupe GEOS n'en assume nullement l'exactitude et décline toute responsabilité à leur égard.

Toute personne ou organisation qui s'appuie sur ou utilise ce document à des fins ou pour des raisons autres que celles convenues par Groupe GEOS et TSMC sans avoir obtenu au préalable le consentement écrit de TSMC, le fait à ses propres risques. Groupe GEOS décline toute responsabilité envers TSMC et les tiers en ce qui a trait à l'utilisation (publication, renvoi, référence, citation ou diffusion) du présent document, ainsi que de toute décision prise ou action entreprise sur la foi dudit document par quelque tiers que ce soit.

Appendix VI. Certificates of analysis – NO_2

Your P.O. #: 3000001617
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2023/12/21-2024/02/15
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/03/06
Report #: R3471406
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C413075
Received: 2024/02/26, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/02/28	2024/03/01	PTC SOP-00148	Passive NO2 in ATM

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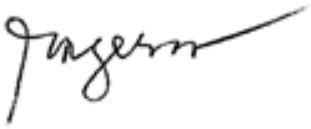
Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key



Rowena Geron
Customer Service Associate
06 Mar 2024 07:53:04

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Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C413075
Report Date: 2024/03/06

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CJT911	CJT912	CJT932	CJT933		
Sampling Date		2023/12/30 11:20	2023/12/30 12:25	2023/12/20 14:30	2023/12/21 12:00		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	<0.1	<0.1	0.2	0.3	0.1	B296842
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C413075
Report Date: 2024/03/06

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C413075
Report Date: 2024/03/06

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B296842	S1T	Spiked Blank	Calculated NO2			98	%	90 - 110
B296842	S1T	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C413075
Report Date: 2024/03/06

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

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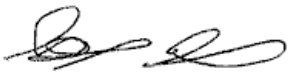

Steven Gloux, Senior Analyst

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001617
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/02/09-2024/03/17
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/04/05
Report #: R3484170
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C421007
Received: 2024/03/26, 09:30

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/03/28	2024/04/04	PTC SOP-00148	Passive NO2 in ATM

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
05 Apr 2024 07:46:52

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Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C421007
Report Date: 2024/04/05

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CLH187	CLH188	CLH190	CLH191		
Sampling Date		2024/02/15 12:10	2024/02/11 12:20	2024/02/09 14:05	2024/02/09 16:00		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	DAMAGED	<0.1	0.4	0.4	0.1	B324932
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C421007
Report Date: 2024/04/05

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

GENERAL COMMENTS

Sample CLH187 [AQS2-NO2] : NO2 Sample CLH187 was recieved with a broken paper barrier. S1T (2024/04/04)

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C421007
Report Date: 2024/04/05

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B324932	S1T	Spiked Blank	Calculated NO2			106	%	90 - 110
B324932	S1T	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C421007
Report Date: 2024/04/05

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

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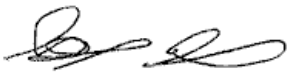

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001617
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/03/17-2024/04/27
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/05/14
Report #: R3499761
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C431742
Received: 2024/05/03, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/05/09	2024/05/13	PTC SOP-00148	Passive NO2 in ATM

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
14 May 2024 12:20:30

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Bureau Veritas Job #: C431742
Report Date: 2024/05/14

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CNC446	CNC447	CNC449	CNC450		
Sampling Date		2024/03/17 14:30	2024/03/15 13:15	2024/03/12 11:15	2024/03/13 14:20		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	<0.1	<0.1	<0.1	<0.1	0.1	B364266
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C431742
Report Date: 2024/05/14

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

GENERAL COMMENTS

Travel blank result for NO2 exceeded acceptance criteria of >RDL. Possible contamination may have occurred. Sample results have been blank subtracted. S1T (2024/05/10)

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C431742
Report Date: 2024/05/14

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B364266	S1T	Spiked Blank	Calculated NO2			100	%	90 - 110
B364266	S1T	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C431742
Report Date: 2024/05/14

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001617
Sampler Initials: JFD

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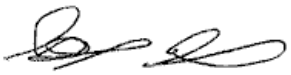

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001770
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/04/27-2024/06/08
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/06/21
Report #: R3517015
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C443614
Received: 2024/06/13, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/06/18	2024/06/21	PTC SOP-00148	Passive NO2 in ATM

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
21 Jun 2024 09:56:00

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Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C443614
Report Date: 2024/06/21

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CPG898	CPG899	CPG901	CPG902		
Sampling Date		2024/04/27 10:25	2024/04/27 12:55	2024/04/24 16:25	2024/04/27 16:33		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	0.2	<0.1	0.2	0.8	0.1	B406276
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C443614
Report Date: 2024/06/21

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B406276	S1T	Spiked Blank	Calculated NO2			99	%	90 - 110
B406276	S1T	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C443614
Report Date: 2024/06/21

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

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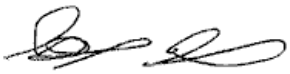

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001770
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/06/08-2024/07/08
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/07/22
Report #: R3530186
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C452474
Received: 2024/07/12, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/07/17	2024/07/19	PTC SOP-00148	Passive NO2 in ATM

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* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
22 Jul 2024 09:25:17

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Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C452474
Report Date: 2024/07/22

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CRC798	CRC799	CRC801	CRC802		
Sampling Date		2024/06/06 15:12	2024/06/06 16:46	2024/06/07 11:40	2024/06/07 10:51		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	<0.1	<0.1	<0.1	0.2	0.1	B442299
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Travel blank result for NO2 exceeded acceptance criteria of >RDL. Possible contamination may have occurred. Sample results have been blank subtracted. S1T (2024/07/19)

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C452474
Report Date: 2024/07/22

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B442299	S1T	Spiked Blank	Calculated NO2			100	%	90 - 110
B442299	S1T	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

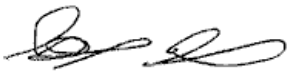
Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C452474
Report Date: 2024/07/22

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Steven Gloux, Senior Analyst

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Your P.O. #: 3000001770
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/07/08-2024/08/11
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/08/23
Report #: R3545906
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C462863
Received: 2024/08/15, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/08/19	2024/08/20	PTC SOP-00148	Passive NO2 in ATM

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
23 Aug 2024 08:49:52

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Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C462863
Report Date: 2024/08/23

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CTJ590	CTJ591	CTJ593	CTJ594		
Sampling Date		2024/07/08 13:00	2024/07/08 13:40	2024/07/08 18:00	2024/07/08 17:20		
	UNITS	**AQS2-NO2**	**AQS4-NO2**	**AQS6-NO2**	**AQS9-NO2**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated NO2	ppb	0.2	0.9	1.0	0.8	0.1	B484687
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C462863
Report Date: 2024/08/23

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C462863
Report Date: 2024/08/23

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B484687	SDK	Spiked Blank	Calculated NO2	2024/08/20		97	%	90 - 110
B484687	SDK	Method Blank	Calculated NO2	2024/08/20	<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C462863
Report Date: 2024/08/23

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

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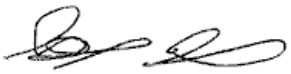

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Your P.O. #: 3000001770
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/08/11-2024/09/11
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/09/26
Report #: R3562264
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473259
Received: 2024/09/17, 10:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/09/18	2024/09/24	PTC SOP-00148	Passive NO2 in ATM

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
26 Sep 2024 10:14:58

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Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Job #: C473259
Report Date: 2024/09/26

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CVQ010	CVQ011	CVQ013	CVQ014		
Sampling Date		2024/08/11 13:58	2024/08/11 15:44	2024/08/11 09:26	2024/08/11 12:35		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	0.3	0.2	0.6	0.5	0.1	B534944
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C473259
Report Date: 2024/09/26

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B534944	SDK	Spiked Blank	Calculated NO2			94	%	90 - 110
B534944	SDK	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C473259
Report Date: 2024/09/26

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001770

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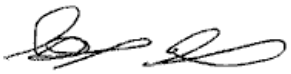

Steven Gloux, Senior Analyst

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Your P.O. #: 3000001868
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/09/11-2024/10/12
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/11/04
Report #: R3581921
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C485962
Received: 2024/10/24, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/10/28	2024/10/29	PTC SOP-00148	Passive NO2 in ATM

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
04 Nov 2024 08:10:00

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Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Job #: C485962
Report Date: 2024/11/04

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CYO846	CYO847	CYO849	CYO850		
Sampling Date		2024/09/11 12:54	2024/09/11 13:49	2024/09/11 18:45	2024/09/11 17:58		
	UNITS	**AQS2-NO2**	**AQS4-NO2**	**AQS6-NO2**	**AQS9-NO2**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated NO2	ppb	0.6	0.7	0.6	2.2	0.1	B582340
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C485962
Report Date: 2024/11/04

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B582340	SDK	Spiked Blank	Calculated NO2			98	%	90 - 110
B582340	SDK	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C485962
Report Date: 2024/11/04

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

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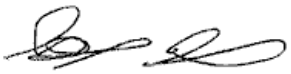

Steven Gloux, Senior Analyst

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Your P.O. #: 3000001868
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/10/12-2024/11/11
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2024/11/26
Report #: R3592673
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C494029
Received: 2024/11/15, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2024/11/20	2024/11/25	PTC SOP-00148	Passive NO2 in ATM

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Results relate only to the items tested.
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Encryption Key

Gladys Raymundo
Customer Service Associate
26 Nov 2024 11:21:53

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Phone# (780) 378-8500

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Bureau Veritas Job #: C494029
Report Date: 2024/11/26

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		DAP083	DAP084	DAP086	DAP087		
Sampling Date		2024/10/12 11:45	2024/10/12 12:38	2024/10/12 14:57	2024/10/12 14:00		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	<0.1	0.3	0.8	0.6	0.1	B614632
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C494029
Report Date: 2024/11/26

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B614632	SDK	Spiked Blank	Calculated NO2			98	%	90 - 110
B614632	SDK	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C494029
Report Date: 2024/11/26

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

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Yang Liu, Laboratory Supervisor

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001868
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/11/11-2024/12/19
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2025/01/14
Report #: R3610930
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C500436
Received: 2025/01/03, 08:00

Sample Matrix: Air
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	4	2025/01/07	2025/01/13	PTC SOP-00148	Passive NO2 in ATM

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Encryption Key

Rowena Geron
Customer Service Associate
14 Jan 2025 09:30:53

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Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C500436
Report Date: 2025/01/14

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		DCS342	DCS343	DCS345	DCS346		
Sampling Date		2024/11/11 09:21	2024/11/11 10:17	2024/11/11 14:10	2024/11/11 11:44		
	UNITS	AQS2-NO2	AQS4-NO2	AQS6-NO2	AQS9-NO2	RDL	QC Batch
Passive Monitoring							
Calculated NO2	ppb	0.1	0.3	0.4	0.3	0.1	B655596
RDL = Reportable Detection Limit							

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C500436
Report Date: 2025/01/14

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B655596	SDK	Spiked Blank	Calculated NO2			98	%	90 - 110
B655596	SDK	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C500436
Report Date: 2025/01/14

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

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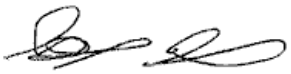

Steven Gloux, Senior Analyst

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001868
Your Project #: PASSIVE NO2 / DS03-4
Site#: 2024/12/17-2025/02/03
Site Location: Timmins, Newfoundland

Attention: TSMC Environment

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

Report Date: 2025/02/20
Report #: R3624323
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C513584
Received: 2025/02/10, 08:30

Sample Matrix: Air
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
NO2 Passive Analysis	2	2025/02/12	2025/02/19	PTC SOP-00148	Passive NO2 in ATM

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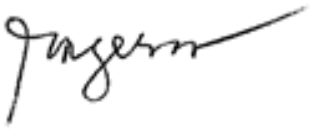
Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key



Rowena Geron
Customer Service Associate
20 Feb 2025 09:04:59

Please direct all questions regarding this Certificate of Analysis to:
Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

==========

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C513584
Report Date: 2025/02/20

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		DEM656	DEM657		
Sampling Date		2024/12/17 11:51	2024/12/18 10:26		
	UNITS	**AQS6-NO2**	**AQS9-NO2**	**RDL**	**QC Batch**
Passive Monitoring					
Calculated NO2	ppb	0.3	0.4	0.1	B692138
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C513584
Report Date: 2025/02/20

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B692138	SDK	Spiked Blank	Calculated NO2			98	%	90 - 110
B692138	SDK	Method Blank	Calculated NO2		<0.1		ppb	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

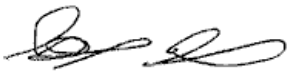
Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C513584
Report Date: 2025/02/20

Tata Steel Mineral Canada
Client Project #: PASSIVE NO2 / DS03-4
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Steven Gloux, Senior Analyst

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Appendix VII. Calculation example and certificates of analysis- Dustfall

Dustfall calculation example

Area sampled corresponds to the area of the opening of the dustfall jar (0.017672 m^2).

Dust weight is the weight of the dust collected in the jar, as presented on the Certificates of Analyses.

((Dust weight (g) / Area sampled (m^2)) / Days sampled) * 30 days = Dust deposition rate ($g/m^2/30d$)

Your P.O. #: 3000001770
Your Project #: Dustfall
Site Location: DS03-DSO4
Your C.O.C. #: 139017

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/05
Report #: R2966329
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C436764
Received: 2024/07/10, 09:00

Sample Matrix: Air
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Weight of particles	5	2024/07/10	2024/07/10	STL SOP-00020	MA100–Part. 1.0 R4 m
Extractable Metals in Impinger	5	2024/08/02	2024/08/03	STL SOP-00075	MA.200–Mét. 1.2 R7 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: Dustfall
Site Location: DS03-DSO4
Your C.O.C. #: 139017

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/05
Report #: R2966329
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C436764
Received: 2024/07/10, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
05 Aug 2024 14:46:21

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Job #: C436764
Report Date: 2024/08/05

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770
Sampler Initials: NS

METALS (AIR)

Bureau Veritas ID		NF4241	NF4242	NF4243	NF4244	NF4245		
Sampling Date		2024/07/08 12:15	2024/07/08 13:00	2024/07/08 13:40	2024/07/08 18:00	2024/07/08 17:20		
COC Number		139017	139017	139017	139017	139017		
	Units	AQS1	AQS2	AQS4	AQS6	AQS9	RDL	QC Batch
METALS								
Impinger solution Antimony (Sb) †	ug	0.1	0.1	0.1	0.1	0.1	0.1	2551960
Impinger solution Silver (Ag) †	ug	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2551960
Impinger solution Arsenic (As) †	ug	3.5	0.6	2.0	0.5	0.5	0.1	2551960
Impinger solution Barium (Ba) †	ug	12.4	13.1	16.2	24.9	41.5	0.05	2551960
Impinger solution Beryllium (Be) †	ug	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	2551960
Impinger solution Cadmium (Cd) †	ug	0.07	<0.05	0.15	<0.05	<0.05	0.05	2551960
Impinger solution Chromium (Cr) †	ug	1.3	1.8	2.9	1.8	1.6	0.1	2551960
Impinger solution Copper (Cu) †	ug	3.8	3.3	10.4	6.7	2.9	0.1	2551960
Impinger solution Iron (Fe) †	ug	683	479	2270	1140	770	5	2551960
Impinger solution Manganese (Mn) †	ug	71.1	45.7	110	66.9	47.5	0.1	2551960
Impinger solution Mercury (Hg) †	ug	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	2551960
Impinger solution Nickel (Ni) †	ug	1.5	1.3	2.6	1.0	1.5	0.1	2551960
Impinger solution Lead (Pb) †	ug	2.9	2.9	10.1	3.8	2.0	0.5	2551960
Impinger solution Thallium (Tl) †	ug	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2551960
Impinger solution Vanadium (V) †	ug	<0.2	<0.2	0.4	<0.2	<0.2	0.2	2551960
Impinger solution Zinc (Zn) †	ug	21.3	12.3	36.3	11.7	18.4	0.1	2551960

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770
Sampler Initials: NS

CONVENTIONAL PARAMETERS (AIR)

Bureau Veritas ID		NF4241	NF4242	NF4243	NF4244	NF4245		
Sampling Date		2024/07/08 12:15	2024/07/08 13:00	2024/07/08 13:40	2024/07/08 18:00	2024/07/08 17:20		
COC Number		139017	139017	139017	139017	139017		
	Units	AQS1	AQS2	AQS4	AQS6	AQS9	RDL	QC Batch
CONVENTIONALS								
Weight of particles	g	0.055	0.012	0.095	0.0097	0.012	0.0010	2542460

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C436764
Report Date: 2024/08/05

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770
Sampler Initials: NS

GENERAL COMMENTS

Results relate only to the items tested.

2024/08/05 14:45

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Bureau Veritas Job #: C436764
Report Date: 2024/08/05

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770
Sampler Initials: NS

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2542460	HKN	Spiked Blank	Weight of particles	2024/07/10		103	%
2542460	HKN	Spiked Blank DUP	Weight of particles	2024/07/10		103	%
2542460	HKN	Method Blank	Weight of particles	2024/07/10	<0.0010		g
2551960	ST5	Spiked Blank	Impinger solution Antimony (Sb)	2024/08/03		105	%
			Impinger solution Silver (Ag)	2024/08/03		98	%
			Impinger solution Arsenic (As)	2024/08/03		99	%
			Impinger solution Barium (Ba)	2024/08/03		101	%
			Impinger solution Beryllium (Be)	2024/08/03		101	%
			Impinger solution Cadmium (Cd)	2024/08/03		99	%
			Impinger solution Chromium (Cr)	2024/08/03		96	%
			Impinger solution Copper (Cu)	2024/08/03		96	%
			Impinger solution Iron (Fe)	2024/08/03		96	%
			Impinger solution Manganese (Mn)	2024/08/03		99	%
			Impinger solution Mercury (Hg)	2024/08/03		98	%
			Impinger solution Nickel (Ni)	2024/08/03		97	%
			Impinger solution Lead (Pb)	2024/08/03		98	%
			Impinger solution Thallium (Tl)	2024/08/03		97	%
			Impinger solution Vanadium (V)	2024/08/03		97	%
			Impinger solution Zinc (Zn)	2024/08/03		96	%
2551960	ST5	Method Blank	Impinger solution Antimony (Sb)	2024/08/03	<0.1		ug
			Impinger solution Silver (Ag)	2024/08/03	<0.5		ug
			Impinger solution Arsenic (As)	2024/08/03	<0.1		ug
			Impinger solution Barium (Ba)	2024/08/03	<0.05		ug
			Impinger solution Beryllium (Be)	2024/08/03	<0.05		ug
			Impinger solution Cadmium (Cd)	2024/08/03	<0.05		ug
			Impinger solution Chromium (Cr)	2024/08/03	<0.1		ug
			Impinger solution Copper (Cu)	2024/08/03	<0.1		ug
			Impinger solution Iron (Fe)	2024/08/03	<5		ug
			Impinger solution Manganese (Mn)	2024/08/03	<0.1		ug
			Impinger solution Mercury (Hg)	2024/08/03	<0.05		ug
			Impinger solution Nickel (Ni)	2024/08/03	<0.1		ug
			Impinger solution Lead (Pb)	2024/08/03	<0.5		ug
			Impinger solution Thallium (Tl)	2024/08/03	<0.1		ug
			Impinger solution Vanadium (V)	2024/08/03	<0.2		ug
			Impinger solution Zinc (Zn)	2024/08/03	0.4, RDL=0.1		ug

RDL = Reportable Detection Limit

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C436764
Report Date: 2024/08/05

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770
Sampler Initials: NS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001617
Your Project #: Dustfall
Site Location: DS03-DSO4
Your C.O.C. #: 142532

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/03
Report #: R2974759
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C444498
Received: 2024/08/13, 09:00

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Weight of particles	7	N/A	2024/08/17	STL SOP-00020	MA100–Part. 1.0 R4 m
Extractable Metals in Impinger	3	2024/08/30	2024/08/30	STL SOP-00075	MA.200–Mét. 1.2 R7 m
Extractable Metals in Impinger	4	2024/08/30	2024/08/31	STL SOP-00075	MA.200–Mét. 1.2 R7 m

Remarks:

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001617
Your Project #: Dustfall
Site Location: DS03-DSO4
Your C.O.C. #: 142532

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/03
Report #: R2974759
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C444498
Received: 2024/08/13, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
03 Sep 2024 01:19:50

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001617

METALS (WATER)

Bureau Veritas ID		NJ0633	NJ0634		NJ0635	NJ0636	NJ0637		
Sampling Date		2024/08/11 14:51	2024/08/11 13:58		2024/08/11 15:44	2024/08/11 09:26	2024/08/11 12:35		
COC Number		142532	142532		142532	142532	142532		
	Units	AQS1	AQS2	QC Batch	AQS4	AQS6	AQS9	RDL	QC Batch
METALS									
Impinger solution Antimony (Sb) †	ug	<0.1	0.1	2562087	<0.1	0.1	0.2	0.1	2562129
Impinger solution Silver (Ag) †	ug	<0.5	<0.5	2562087	<0.5	<0.5	<0.5	0.5	2562129
Impinger solution Arsenic (As) †	ug	0.2	0.3	2562087	0.4	0.5	0.2	0.1	2562129
Impinger solution Barium (Ba) †	ug	4.27	5.28	2562087	7.65	15.5	30.8	0.05	2562129
Impinger solution Beryllium (Be) †	ug	<0.05	<0.05	2562087	<0.05	<0.05	<0.05	0.05	2562129
Impinger solution Cadmium (Cd) †	ug	<0.05	<0.05	2562087	0.21	<0.05	<0.05	0.05	2562129
Impinger solution Chromium (Cr) †	ug	0.6	0.5	2562087	0.9	1.3	0.5	0.1	2562129
Impinger solution Copper (Cu) †	ug	1.7	1.9	2562087	6.6	5.4	1.9	0.1	2562129
Impinger solution Iron (Fe) †	ug	426	597	2562087	439	1370	280	5	2562129
Impinger solution Manganese (Mn) †	ug	43.2	21.3	2562087	52.7	49.7	25.5	0.1	2562129
Impinger solution Mercury (Hg) †	ug	<0.05	<0.05	2562087	<0.05	<0.05	<0.05	0.05	2562129
Impinger solution Nickel (Ni) †	ug	0.6	0.4	2562087	0.9	0.7	0.5	0.1	2562129
Impinger solution Lead (Pb) †	ug	3.4	2.1	2562087	4.7	3.7	2.5	0.5	2562129
Impinger solution Thallium (Tl) †	ug	<0.1	<0.1	2562087	<0.1	<0.1	<0.1	0.1	2562129
Impinger solution Vanadium (V) †	ug	<0.2	<0.2	2562087	0.3	<0.2	<0.2	0.2	2562129
Impinger solution Zinc (Zn) †	ug	9.0	5.9	2562087	39.7	8.9	10.1	0.1	2562129

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001617

METALS (WATER)

Bureau Veritas ID		NJ0638	NJ0639		
Sampling Date		2024/08/11 10:41	2024/08/11 10:48		
COC Number		142532	142532		
	Units	Dolly 1	Dolly 2	RDL	QC Batch
METALS					
Impinger solution Antimony (Sb) †	ug	0.1	<0.1	0.1	2562087
Impinger solution Silver (Ag) †	ug	<0.5	<0.5	0.5	2562087
Impinger solution Arsenic (As) †	ug	0.3	0.2	0.1	2562087
Impinger solution Barium (Ba) †	ug	6.62	12.8	0.05	2562087
Impinger solution Beryllium (Be) †	ug	<0.05	<0.05	0.05	2562087
Impinger solution Cadmium (Cd) †	ug	<0.05	<0.05	0.05	2562087
Impinger solution Chromium (Cr) †	ug	0.6	0.4	0.1	2562087
Impinger solution Copper (Cu) †	ug	2.1	2.1	0.1	2562087
Impinger solution Iron (Fe) †	ug	135	150	5	2562087
Impinger solution Manganese (Mn) †	ug	48.3	29.1	0.1	2562087
Impinger solution Mercury (Hg) †	ug	<0.05	<0.05	0.05	2562087
Impinger solution Nickel (Ni) †	ug	0.7	0.6	0.1	2562087
Impinger solution Lead (Pb) †	ug	2.3	1.0	0.5	2562087
Impinger solution Thallium (Tl) †	ug	<0.1	<0.1	0.1	2562087
Impinger solution Vanadium (V) †	ug	<0.2	<0.2	0.2	2562087
Impinger solution Zinc (Zn) †	ug	46.0	91.9	0.1	2562087

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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Bureau Veritas Job #: C444498
Report Date: 2024/09/03

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001617

CONVENTIONAL PARAMETERS (WATER)

Bureau Veritas ID		NJ0633	NJ0634	NJ0635	NJ0636	NJ0637	NJ0638	NJ0639		
Sampling Date		2024/08/11 14:51	2024/08/11 13:58	2024/08/11 15:44	2024/08/11 09:26	2024/08/11 12:35	2024/08/11 10:41	2024/08/11 10:48		
COC Number		142532	142532	142532	142532	142532	142532	142532		
	Units	AQS1	AQS2	AQS4	AQS6	AQS9	Dolly 1	Dolly 2	RDL	QC Batch
CONVENTIONALS										
Weight of particles	g	0.037	0.027	0.10	0.029	0.017	0.022	0.017	0.0010	2557220

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2557220	JCT	Spiked Blank	Weight of particles	2024/08/17		98	%
2557220	JCT	Method Blank	Weight of particles	2024/08/17	<0.0010		g
2562087	DPA	Spiked Blank	Impinger solution Antimony (Sb)	2024/08/30		107	%
			Impinger solution Silver (Ag)	2024/08/30		99	%
			Impinger solution Arsenic (As)	2024/08/30		97	%
			Impinger solution Barium (Ba)	2024/08/30		101	%
			Impinger solution Beryllium (Be)	2024/08/30		100	%
			Impinger solution Cadmium (Cd)	2024/08/30		98	%
			Impinger solution Chromium (Cr)	2024/08/30		97	%
			Impinger solution Copper (Cu)	2024/08/30		96	%
			Impinger solution Iron (Fe)	2024/08/30		102	%
			Impinger solution Manganese (Mn)	2024/08/30		98	%
			Impinger solution Mercury (Hg)	2024/08/30		102	%
			Impinger solution Nickel (Ni)	2024/08/30		96	%
			Impinger solution Lead (Pb)	2024/08/30		98	%
			Impinger solution Thallium (Tl)	2024/08/30		97	%
			Impinger solution Vanadium (V)	2024/08/30		96	%
			Impinger solution Zinc (Zn)	2024/08/30		96	%
2562087	DPA	Method Blank	Impinger solution Antimony (Sb)	2024/08/30	<0.1		ug
			Impinger solution Silver (Ag)	2024/08/30	<0.5		ug
			Impinger solution Arsenic (As)	2024/08/30	<0.1		ug
			Impinger solution Barium (Ba)	2024/08/30	<0.05		ug
			Impinger solution Beryllium (Be)	2024/08/30	<0.05		ug
			Impinger solution Cadmium (Cd)	2024/08/30	<0.05		ug
			Impinger solution Chromium (Cr)	2024/08/30	<0.1		ug
			Impinger solution Copper (Cu)	2024/08/30	<0.1		ug
			Impinger solution Iron (Fe)	2024/08/30	<5		ug
			Impinger solution Manganese (Mn)	2024/08/30	<0.1		ug
			Impinger solution Mercury (Hg)	2024/08/30	<0.05		ug
			Impinger solution Nickel (Ni)	2024/08/30	<0.1		ug
			Impinger solution Lead (Pb)	2024/08/30	<0.5		ug
			Impinger solution Thallium (Tl)	2024/08/30	<0.1		ug
			Impinger solution Vanadium (V)	2024/08/30	<0.2		ug
			Impinger solution Zinc (Zn)	2024/08/30	0.4, RDL=0.1		ug
2562129	DPA	Spiked Blank	Impinger solution Antimony (Sb)	2024/08/30		107	%
			Impinger solution Silver (Ag)	2024/08/30		100	%
			Impinger solution Arsenic (As)	2024/08/30		98	%
			Impinger solution Barium (Ba)	2024/08/30		104	%
			Impinger solution Beryllium (Be)	2024/08/30		101	%
			Impinger solution Cadmium (Cd)	2024/08/30		100	%
			Impinger solution Chromium (Cr)	2024/08/30		98	%
			Impinger solution Copper (Cu)	2024/08/30		98	%
			Impinger solution Iron (Fe)	2024/08/30		104	%
			Impinger solution Manganese (Mn)	2024/08/30		100	%
			Impinger solution Mercury (Hg)	2024/08/30		103	%
			Impinger solution Nickel (Ni)	2024/08/30		98	%
			Impinger solution Lead (Pb)	2024/08/30		101	%
			Impinger solution Thallium (Tl)	2024/08/30		88	%
			Impinger solution Vanadium (V)	2024/08/30		97	%
			Impinger solution Zinc (Zn)	2024/08/30		96	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2562129	DPA	Method Blank	Impinger solution Antimony (Sb)	2024/08/30	<0.1		ug
			Impinger solution Silver (Ag)	2024/08/30	<0.5		ug
			Impinger solution Arsenic (As)	2024/08/30	<0.1		ug
			Impinger solution Barium (Ba)	2024/08/30	<0.05		ug
			Impinger solution Beryllium (Be)	2024/08/30	<0.05		ug
			Impinger solution Cadmium (Cd)	2024/08/30	<0.05		ug
			Impinger solution Chromium (Cr)	2024/08/30	<0.1		ug
			Impinger solution Copper (Cu)	2024/08/30	<0.1		ug
			Impinger solution Iron (Fe)	2024/08/30	<5		ug
			Impinger solution Manganese (Mn)	2024/08/30	<0.1		ug
			Impinger solution Mercury (Hg)	2024/08/30	<0.05		ug
			Impinger solution Nickel (Ni)	2024/08/30	<0.1		ug
			Impinger solution Lead (Pb)	2024/08/30	<0.5		ug
			Impinger solution Thallium (Tl)	2024/08/30	<0.1		ug
			Impinger solution Vanadium (V)	2024/08/30	<0.2		ug
			Impinger solution Zinc (Zn)	2024/08/30	<0.1		ug

RDL = Reportable Detection Limit

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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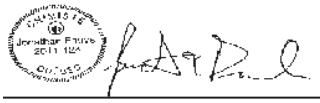
Bureau Veritas Job #: C444498
Report Date: 2024/09/03

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001617

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Mira El Masri, M.Sc. Chemist, Montréal, Analyst II

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: Dustfall
Site Location: DS03-DSO4
Your C.O.C. #: 146099

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/10
Report #: R2986389
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C452286
Received: 2024/09/13, 13:45

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Weight of particles	7	N/A	2024/09/14	STL SOP-00020	MA100–Part. 1.0 R4 m
Extractable Metals in Impinger	7	2024/10/08	2024/10/09	STL SOP-00075	MA.200–Mét. 1.2 R7 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: Dustfall
Site Location: DS03-DSO4
Your C.O.C. #: 146099

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/10
Report #: R2986389
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C452286
Received: 2024/09/13, 13:45

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
10 Oct 2024 13:46:18

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Job #: C452286
Report Date: 2024/10/10

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770

METALS (WATER)

Bureau Veritas ID		NM6925	NM6926	NM6927	NM6928	NM6929	NM6930		
Sampling Date		2024/09/11 11:55	2024/09/11 12:54	2024/09/11 13:47	2024/09/11 18:45	2024/09/11 17:55	2024/09/12 12:01		
COC Number		146099	146099	146099	146099	146099	146099		
	Units	**AQS1**	**AQS2**	**AQS4**	**AQS6**	**AQS9**	**Dolly 1**	**RDL**	**QC Batch**
METALS									
Impinger solution Antimony (Sb) †	ug	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.1	2577395
Impinger solution Silver (Ag) †	ug	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2577395
Impinger solution Arsenic (As) †	ug	0.1	0.1	0.2	0.1	0.1	<0.1	0.1	2577395
Impinger solution Barium (Ba) †	ug	1.00	8.53	26.4	25.1	15.4	6.44	0.05	2577395
Impinger solution Beryllium (Be) †	ug	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	2577395
Impinger solution Cadmium (Cd) †	ug	0.33	<0.05	0.16	<0.05	<0.05	<0.05	0.05	2577395
Impinger solution Chromium (Cr) †	ug	0.9	1.4	1.4	0.7	0.5	0.3	0.1	2577395
Impinger solution Copper (Cu) †	ug	1.7	2.9	1.8	2.3	0.9	1.9	0.1	2577395
Impinger solution Iron (Fe) †	ug	32	62	400	376	77	150	5	2577395
Impinger solution Manganese (Mn) †	ug	33.9	17.9	19.8	34.8	16.4	17.8	0.1	2577395
Impinger solution Mercury (Hg) †	ug	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	2577395
Impinger solution Nickel (Ni) †	ug	0.9	0.9	1.2	0.8	0.7	0.6	0.1	2577395
Impinger solution Lead (Pb) †	ug	<0.5	0.9	1.7	2.4	1.3	0.9	0.5	2577395
Impinger solution Thallium (Tl) †	ug	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2577395
Impinger solution Vanadium (V) †	ug	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2577395
Impinger solution Zinc (Zn) †	ug	5.2	7.5	12.6	5.2	4.0	84.2	0.1	2577395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770

METALS (WATER)

Bureau Veritas ID		NM6931		
Sampling Date		2024/09/12 11:30		
COC Number		146099		
	Units	Dolly 2	RDL	QC Batch
METALS				
Impinger solution Antimony (Sb) †	ug	0.1	0.1	2577395
Impinger solution Silver (Ag) †	ug	<0.5	0.5	2577395
Impinger solution Arsenic (As) †	ug	0.1	0.1	2577395
Impinger solution Barium (Ba) †	ug	2.85	0.05	2577395
Impinger solution Beryllium (Be) †	ug	<0.05	0.05	2577395
Impinger solution Cadmium (Cd) †	ug	<0.05	0.05	2577395
Impinger solution Chromium (Cr) †	ug	0.5	0.1	2577395
Impinger solution Copper (Cu) †	ug	1.2	0.1	2577395
Impinger solution Iron (Fe) †	ug	222	5	2577395
Impinger solution Manganese (Mn) †	ug	17.7	0.1	2577395
Impinger solution Mercury (Hg) †	ug	<0.05	0.05	2577395
Impinger solution Nickel (Ni) †	ug	0.7	0.1	2577395
Impinger solution Lead (Pb) †	ug	1.3	0.5	2577395
Impinger solution Thallium (Tl) †	ug	<0.1	0.1	2577395
Impinger solution Vanadium (V) †	ug	<0.2	0.2	2577395
Impinger solution Zinc (Zn) †	ug	38.1	0.1	2577395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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Bureau Veritas Job #: C452286
Report Date: 2024/10/10

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770

CONVENTIONAL PARAMETERS (WATER)

Bureau Veritas ID		NM6925	NM6926	NM6927	NM6928	NM6929	NM6930	NM6931		
Sampling Date		2024/09/11 11:55	2024/09/11 12:54	2024/09/11 13:47	2024/09/11 18:45	2024/09/11 17:55	2024/09/12 12:01	2024/09/12 11:30		
COC Number		146099	146099	146099	146099	146099	146099	146099		
	Units	AQS1	AQS2	AQS4	AQS6	AQS9	Dolly 1	Dolly 2	RDL	QC Batch
CONVENTIONALS										
Weight of particles	g	0.0030	0.0084	0.0072	0.0055	0.0068	0.0062	0.0060	0.0010	2567361

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C452286
Report Date: 2024/10/10

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2567361	RIY	Spiked Blank	Weight of particles	2024/09/14		102	%
2567361	RIY	Method Blank	Weight of particles	2024/09/14	<0.0010		g
2577395	DPA	Spiked Blank	Impinger solution Antimony (Sb)	2024/10/09		102	%
			Impinger solution Silver (Ag)	2024/10/09		97	%
			Impinger solution Arsenic (As)	2024/10/09		93	%
			Impinger solution Barium (Ba)	2024/10/09		96	%
			Impinger solution Beryllium (Be)	2024/10/09		96	%
			Impinger solution Cadmium (Cd)	2024/10/09		95	%
			Impinger solution Chromium (Cr)	2024/10/09		92	%
			Impinger solution Copper (Cu)	2024/10/09		93	%
			Impinger solution Iron (Fe)	2024/10/09		95	%
			Impinger solution Manganese (Mn)	2024/10/09		93	%
			Impinger solution Mercury (Hg)	2024/10/09		94	%
			Impinger solution Nickel (Ni)	2024/10/09		92	%
			Impinger solution Lead (Pb)	2024/10/09		94	%
			Impinger solution Thallium (Tl)	2024/10/09		86	%
			Impinger solution Vanadium (V)	2024/10/09		93	%
			Impinger solution Zinc (Zn)	2024/10/09		93	%
2577395	DPA	Method Blank	Impinger solution Antimony (Sb)	2024/10/09	<0.1		ug
			Impinger solution Silver (Ag)	2024/10/09	<0.5		ug
			Impinger solution Arsenic (As)	2024/10/09	<0.1		ug
			Impinger solution Barium (Ba)	2024/10/09	<0.05		ug
			Impinger solution Beryllium (Be)	2024/10/09	<0.05		ug
			Impinger solution Cadmium (Cd)	2024/10/09	<0.05		ug
			Impinger solution Chromium (Cr)	2024/10/09	<0.1		ug
			Impinger solution Copper (Cu)	2024/10/09	<0.1		ug
			Impinger solution Iron (Fe)	2024/10/09	<5		ug
			Impinger solution Manganese (Mn)	2024/10/09	<0.1		ug
			Impinger solution Mercury (Hg)	2024/10/09	<0.05		ug
			Impinger solution Nickel (Ni)	2024/10/09	<0.1		ug
			Impinger solution Lead (Pb)	2024/10/09	<0.5		ug
			Impinger solution Thallium (Tl)	2024/10/09	<0.1		ug
			Impinger solution Vanadium (V)	2024/10/09	<0.2		ug
			Impinger solution Zinc (Zn)	2024/10/09	0.1, RDL=0.1		ug

RDL = Reportable Detection Limit

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C452286
Report Date: 2024/10/10

TATA STEEL MINERALS CANADA
Client Project #: Dustfall
Site Location: DS03-DSO4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: DUSTFALL
Site Location: DS03-DSO4
Your C.O.C. #: 150603

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/07
Report #: R2996516
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C459650
Received: 2024/10/15, 13:30

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Weight of particles	7	N/A	2024/10/15	STL SOP-00020	MA100–Part. 1.0 R4 m
Extractable Metals in Impinger	7	2024/11/05	2024/11/06	STL SOP-00075	MA.200–Mét. 1.2 R7 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: DUSTFALL
Site Location: DS03-DSO4
Your C.O.C. #: 150603

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/07
Report #: R2996516
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C459650
Received: 2024/10/15, 13:30

Encryption Key

Bureau Veritas
07 Nov 2024 05:52:53

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Job #: C459650
Report Date: 2024/11/07

TATA STEEL MINERALS CANADA
Client Project #: DUSTFALL
Site Location: DS03-DSO4
Your P.O. #: 3000001868

METALS (WATER)

Bureau Veritas ID		NQ6125	NQ6126	NQ6127	NQ6128	NQ6129	NQ6130		
Sampling Date		2024/10/12 10:57	2024/10/12 11:45	2024/10/12 12:38	2024/10/12 14:57	2024/10/12 14:00	2024/10/13 09:36		
COC Number		150603	150603	150603	150603	150603	150603		
	Units	AQS1	AQS2	AQS4	AQS6	AQS9	Dolly 1	RDL	QC Batch
METALS									
Impinger solution Antimony (Sb) †	ug	0.1	0.1	0.3	0.1	0.1	0.1	0.1	2589560
Impinger solution Silver (Ag) †	ug	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2589560
Impinger solution Arsenic (As) †	ug	0.1	0.1	1.0	0.2	0.3	0.1	0.1	2589560
Impinger solution Barium (Ba) †	ug	15.6	5.12	14.3	8.80	16.0	2.06	0.05	2589560
Impinger solution Beryllium (Be) †	ug	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	2589560
Impinger solution Cadmium (Cd) †	ug	0.10	0.07	0.07	0.05	0.08	0.25	0.05	2589560
Impinger solution Chromium (Cr) †	ug	1.3	1.0	1.0	1.0	1.3	2.4	0.1	2589560
Impinger solution Copper (Cu) †	ug	1.9	1.5	4.9	2.6	1.5	1.5	0.1	2589560
Impinger solution Iron (Fe) †	ug	831	664	2080	913	2040	383	5	2589560
Impinger solution Manganese (Mn) †	ug	132	17.1	41.6	29.8	26.7	13.4	0.1	2589560
Impinger solution Mercury (Hg) †	ug	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	2589560
Impinger solution Nickel (Ni) †	ug	1.5	0.7	0.7	0.9	1.2	2.0	0.1	2589560
Impinger solution Lead (Pb) †	ug	2.1	1.8	15.6	1.3	2.1	1.1	0.5	2589560
Impinger solution Thallium (Tl) †	ug	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2589560
Impinger solution Vanadium (V) †	ug	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	0.2	2589560
Impinger solution Zinc (Zn) †	ug	6.5	2.5	10.2	4.0	6.8	18.1	0.1	2589560

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS (WATER)

Bureau Veritas ID		NQ6131		
Sampling Date		2024/10/13 09:54		
COC Number		150603		
	Units	Dolly 2	RDL	QC Batch
METALS				
Impinger solution Antimony (Sb) †	ug	<0.1	0.1	2589560
Impinger solution Silver (Ag) †	ug	<0.5	0.5	2589560
Impinger solution Arsenic (As) †	ug	<0.1	0.1	2589560
Impinger solution Barium (Ba) †	ug	3.07	0.05	2589560
Impinger solution Beryllium (Be) †	ug	<0.05	0.05	2589560
Impinger solution Cadmium (Cd) †	ug	0.07	0.05	2589560
Impinger solution Chromium (Cr) †	ug	0.5	0.1	2589560
Impinger solution Copper (Cu) †	ug	4.6	0.1	2589560
Impinger solution Iron (Fe) †	ug	471	5	2589560
Impinger solution Manganese (Mn) †	ug	14.4	0.1	2589560
Impinger solution Mercury (Hg) †	ug	<0.05	0.05	2589560
Impinger solution Nickel (Ni) †	ug	0.9	0.1	2589560
Impinger solution Lead (Pb) †	ug	1.5	0.5	2589560
Impinger solution Thallium (Tl) †	ug	<0.1	0.1	2589560
Impinger solution Vanadium (V) †	ug	<0.2	0.2	2589560
Impinger solution Zinc (Zn) †	ug	45.3	0.1	2589560

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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Bureau Veritas Job #: C459650
Report Date: 2024/11/07

TATA STEEL MINERALS CANADA
Client Project #: DUSTFALL
Site Location: DS03-DSO4
Your P.O. #: 3000001868

CONVENTIONAL PARAMETERS (WATER)

Bureau Veritas ID		NQ6125	NQ6126	NQ6127	NQ6128	NQ6129	NQ6130	NQ6131		
Sampling Date		2024/10/12 10:57	2024/10/12 11:45	2024/10/12 12:38	2024/10/12 14:57	2024/10/12 14:00	2024/10/13 09:36	2024/10/13 09:54		
COC Number		150603	150603	150603	150603	150603	150603	150603		
	Units	**AQS1**	**AQS2**	**AQS4**	**AQS6**	**AQS9**	**Dolly 1**	**Dolly 2**	**RDL**	**QC Batch**
CONVENTIONALS										
Weight of particles	g	0.059	0.013	0.028	0.014	0.025	0.010	0.017	0.0010	2580109

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C459650
Report Date: 2024/11/07

TATA STEEL MINERALS CANADA
Client Project #: DUSTFALL
Site Location: DS03-DSO4
Your P.O. #: 3000001868

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2580109	NSH	Spiked Blank	Weight of particles	2024/10/15		99	%
2580109	NSH	Method Blank	Weight of particles	2024/10/15	<0.0010		g
2589560	ZZH	Spiked Blank	Impinger solution Antimony (Sb)	2024/11/06		104	%
			Impinger solution Silver (Ag)	2024/11/06		97	%
			Impinger solution Arsenic (As)	2024/11/06		99	%
			Impinger solution Barium (Ba)	2024/11/06		95	%
			Impinger solution Beryllium (Be)	2024/11/06		96	%
			Impinger solution Cadmium (Cd)	2024/11/06		100	%
			Impinger solution Chromium (Cr)	2024/11/06		103	%
			Impinger solution Copper (Cu)	2024/11/06		100	%
			Impinger solution Iron (Fe)	2024/11/06		101	%
			Impinger solution Manganese (Mn)	2024/11/06		105	%
			Impinger solution Mercury (Hg)	2024/11/06		93	%
			Impinger solution Nickel (Ni)	2024/11/06		100	%
			Impinger solution Lead (Pb)	2024/11/06		102	%
			Impinger solution Thallium (Tl)	2024/11/06		88	%
			Impinger solution Vanadium (V)	2024/11/06		102	%
			Impinger solution Zinc (Zn)	2024/11/06		97	%
2589560	ZZH	Method Blank	Impinger solution Antimony (Sb)	2024/11/06	<0.1		ug
			Impinger solution Silver (Ag)	2024/11/06	<0.5		ug
			Impinger solution Arsenic (As)	2024/11/06	<0.1		ug
			Impinger solution Barium (Ba)	2024/11/06	<0.05		ug
			Impinger solution Beryllium (Be)	2024/11/06	<0.05		ug
			Impinger solution Cadmium (Cd)	2024/11/06	<0.05		ug
			Impinger solution Chromium (Cr)	2024/11/06	<0.1		ug
			Impinger solution Copper (Cu)	2024/11/06	<0.1		ug
			Impinger solution Iron (Fe)	2024/11/06	<5		ug
			Impinger solution Manganese (Mn)	2024/11/06	<0.1		ug
			Impinger solution Mercury (Hg)	2024/11/06	<0.05		ug
			Impinger solution Nickel (Ni)	2024/11/06	<0.1		ug
			Impinger solution Lead (Pb)	2024/11/06	<0.5		ug
			Impinger solution Thallium (Tl)	2024/11/06	<0.1		ug
			Impinger solution Vanadium (V)	2024/11/06	<0.2		ug
			Impinger solution Zinc (Zn)	2024/11/06	0.1, RDL=0.1		ug

RDL = Reportable Detection Limit

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Mira El Masri, M.Sc. Chemist, Montréal, Analyst II

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Appendix VIII. Calculation example, atmospheric metal concentrations table and certificates of analyses – TPM and PM2.5

Calculation example for PM2.5 and TPM and atmospheric metal concentrations

The weight corresponds to the weight of dust or metals collected on the filter, as reported on the Certificates of Analyses

The 16.7 value corresponds to the sampling flowrate (in Liters / minute)

(weight (g) * 1 000 000) / (16.7 LPM * 60 minutes * 24 hours) = Average TPM or PM2.5 concentration on 24 hours in ug/m^3

weight (ug) / (16.7 LPM * 60 minutes * 24 hours) = Average metal concentration on 24 hours in ug/m^3

Atmospheric TPM and Metal Concentrations

Station	Date		Concentration (ug/m3)/24hr															
		TPM	Antimony	Silver	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Manganese	Mercury	Nickel	Lead	Thallium	Vanadium	Zinc
AQS2	2024-06-08	20.792	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	N.D.	0.915	0.054	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS4	2024-06-10	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-06-20	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS4	2024-06-22	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	N.D.	N.D.	0.012	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-06-24	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	0.349	0.024	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-07-02	8.317	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	N.D.	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS4	2024-07-04	33.267	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-07-06	20.792	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	N.D.	0.010	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-07-14	8.317	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.003	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS4	2024-07-16	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.003	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-07-18	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-07-26	16.633	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	0.003	N.D.	N.D.	N.D.	0.003	N.D.	N.D.	N.D.	N.D.
AQS4	2024-07-28	24.950	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	0.457	0.029	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-07-30	29.108	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.003	N.D.	0.499	0.079	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-08-07	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS4	2024-08-09	16.633	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.002	0.279	0.020	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-08-11	33.267	N.D.	N.D.	N.D.	0.003	N.D.	N.D.	0.004	N.D.	1.539	0.108	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-08-19	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS4	2024-08-21	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	0.002	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	N.D.	N.D.
AQS6	2024-08-23	79.009	N.D.	N.D.	N.D.	0.003	N.D.	N.D.	0.005	0.001	1.871	0.283	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-08-31	33.267	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	0.316	0.023	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS4	2024-09-02	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-09-04	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.009	N.D.	0.013	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-09-12	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	0.003	N.D.	0.005	N.D.	0.003	N.D.	N.D.	N.D.	N.D.
AQS4	2024-09-14	20.792	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.003	N.D.	N.D.	0.008	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-09-16	12.475	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	N.D.	0.011	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-09-24	37.425	N.D.	N.D.	N.D.	0.003	N.D.	N.D.	0.005	N.D.	2.246	0.137	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-09-26	8.317	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.006	0.374	0.046	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS2	2024-10-06	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.003	0.001	N.D.	0.017	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-10-10	12.475	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.010	N.D.	0.013	N.D.	0.014	N.D.	N.D.	N.D.	N.D.
AQS2	2024-10-18	8.317	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	N.D.	N.D.	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
AQS6	2024-10-22	12.475	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	0.012	0.387	0.046	N.D.	0.010	N.D.	N.D.	N.D.	N.D.

Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 135798

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/06/20
Report #: R2952806
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C431925
Received: 2024/06/18, 09:30

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/06/19	2024/06/19	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 135798

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/06/20
Report #: R2952806
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C431925
Received: 2024/06/18, 09:30

Encryption Key

Bureau Veritas
20 Jun 2024 19:16:45

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770
Sampler Initials: DH

CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		ND1389	ND1390	ND1391		
Sampling Date		2024/06/08 00:00	2024/06/10 00:00	2024/06/12 00:00		
COC Number		135798	135798	135798		
	Units	MH0815-01 (AQS2)	MH0811-01 (AQS4)	MH0826-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1403	0.1484	0.1706	0.0002	2534720
Weight of filter and sample	g	0.1405	0.1486	0.1704	0.0002	2534720
Total particles	g	0.0002	0.0002	<0.0002	0.0002	2534720

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C431925
Report Date: 2024/06/20

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770
Sampler Initials: DH

GENERAL COMMENTS

Results relate only to the items tested.

2024/06/20 19:16

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C431925
Report Date: 2024/06/20

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770
Sampler Initials: DH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 137539

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/03
Report #: R2956774
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C433731
Received: 2024/06/26, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/06/29	2024/06/29	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 137539

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/03
Report #: R2956774
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C433731
Received: 2024/06/26, 09:00

Encryption Key

Bureau Veritas
03 Jul 2024 14:41:56

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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Bureau Veritas Job #: C433731
Report Date: 2024/07/03

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770
Sampler Initials: IG

CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		ND9670	ND9671	ND9672		
Sampling Date		2024/06/20 00:00	2024/06/22 00:00	2024/06/24 00:00		
COC Number		137539	137539	137539		
	Units	MH0812-01 (AQS2)	MH0808-01 (AQS4)	MH0822-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1474	0.1548	0.1670	0.0002	2538644
Weight of filter and sample	g	0.1476	0.1549	0.1669	0.0002	2538644
Total particles	g	0.0002	<0.0002	<0.0002	0.0002	2538644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

CONVENTIONAL PARAMETERS (FILTER)

Particules Totales: Les résultats bruts non-arrondis sont utilisés dans le calcul des particules totales. Ce résultat total est alors arrondi à trois chiffres significatifs.

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C433731
Report Date: 2024/07/03

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770
Sampler Initials: IG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 140680

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/31
Report #: R2965434
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C440809
Received: 2024/07/24, 11:45

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	6	2024/07/30	2024/07/30	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 140680

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/31
Report #: R2965434
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C440809
Received: 2024/07/24, 11:45

Encryption Key

Bureau Veritas
31 Jul 2024 17:57:07

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NH4327	NH4328	NH4329	NH4330		
Sampling Date		2024/07/14 00:00	2024/07/16 00:00	2024/07/06 00:00	2024/07/18 00:00		
COC Number		140680	140680	140680	140680		
	Units	ND6108-01 (AQS2)	ND6105-01 (AQS4)	MH0821-01 (AQS6)	ND6112-01 (AQS6)	RDL	QC Batch
CONVENTIONALS							
Weight of filter	g	0.1793	0.1775	0.1443	0.1652	0.0002	2550111
Weight of filter and sample	g	0.1796	0.1780	0.1451	0.1715	0.0002	2550111
Total particles	g	0.0003	0.0005	0.0008	0.0063	0.0002	2550111

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		NH4331	NH4332		
Sampling Date		2024/07/02 00:00	2024/07/04 00:00		
COC Number		140680	140680		
	Units	MH0819-01 (AQS2)	MH0817-01 (AQS4)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.1628	0.1565	0.0002	2550111
Weight of filter and sample	g	0.1635	0.1568	0.0002	2550111
Total particles	g	0.0007	0.0003	0.0002	2550111

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C440809
Report Date: 2024/07/31

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 142063

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/15
Report #: R2968862
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C444189
Received: 2024/08/08, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/08/14	2024/08/14	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 142063

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/15
Report #: R2968862
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C444189
Received: 2024/08/08, 09:00

Encryption Key

Bureau Veritas
15 Aug 2024 01:57:09

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NI9297	NI9298	NI9299		
Sampling Date		2024/07/26 00:00	2024/07/28 00:00	2024/07/30 00:00		
COC Number		142063	142063	142063		
	Units	ND6103-01(AQS2)	ND6101-01 (AQS4)	ND6104-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1649	0.1679	0.1687	0.0002	2555997
Weight of filter and sample	g	0.1650	0.1680	0.1690	0.0002	2555997
Total particles	g	<0.0002	<0.0002	0.0003	0.0002	2555997

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

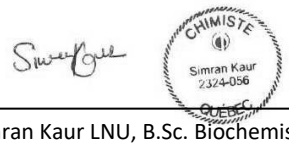
Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C444189
Report Date: 2024/08/15

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 142535

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/20
Report #: R2971050
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C445169
Received: 2024/08/13, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/08/17	2024/08/17	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 142535

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/20
Report #: R2971050
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C445169
Received: 2024/08/13, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
20 Aug 2024 03:22:42

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NJ3106	NJ3107	NJ3108		
Sampling Date		2024/08/07 00:00	2024/08/09 00:00	2024/08/11 00:00		
COC Number		142535	142535	142535		
	Units	ND7629-01(AQS2)	ND7621-01 (AQS4)	ND7632-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1867	0.1984	0.1840	0.0002	2557260
Weight of filter and sample	g	0.1868	0.1983	0.1844	0.0002	2557260
Total particles	g	<0.0002	<0.0002	0.0004	0.0002	2557260

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

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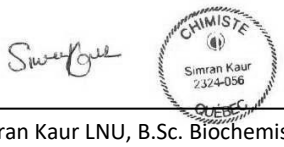
Bureau Veritas Job #: C445169
Report Date: 2024/08/20

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 144109

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/03
Report #: R2974971
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C448085
Received: 2024/08/27, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/08/29	2024/08/29	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 144109

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/03
Report #: R2974971
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C448085
Received: 2024/08/27, 09:00

Encryption Key

Bureau Veritas
03 Sep 2024 14:37:25

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NK6518	NK6519	NK6520		
Sampling Date		2024/08/19 00:00	2024/08/21 00:00	2024/08/23 00:00		
COC Number		144109	144109	144109		
	Units	ND7622-01(AQS2)	ND7625-01 (AQS4)	ND7624-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1933	0.1858	0.2005	0.0002	2561437
Weight of filter and sample	g	0.1934	0.1859	0.2010	0.0002	2561437
Total particles	g	<0.0002	<0.0002	0.0005	0.0002	2561437

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C448085
Report Date: 2024/09/03

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 145578

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/16
Report #: R2978435
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C452045
Received: 2024/09/10, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/09/14	2024/09/14	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Your P.O. #: 3000001770
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 145578

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/16
Report #: R2978435
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C452045
Received: 2024/09/10, 09:00

Encryption Key

Bureau Veritas
16 Sep 2024 15:17:27

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Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NM5600	NM5601	NM5602		
Sampling Date		2024/08/31 00:00	2024/09/02 00:00	2024/08/04 00:00		
COC Number		145578	145578	145578		
	Units	ND7620-01(AQS2)	ND7626-01 (AQS4)	ND7637-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1951	0.1819	0.2053	0.0002	2567301
Weight of filter and sample	g	0.1949	0.1819	0.2056	0.0002	2567301
Total particles	g	<0.0002	<0.0002	0.0003	0.0002	2567301

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

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VALIDATION SIGNATURE PAGE

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Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

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Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 148451

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/02
Report #: R2983963
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455190
Received: 2024/09/25, 09:45

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/09/28	2024/09/28	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 148451

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/02
Report #: R2983963
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455190
Received: 2024/09/25, 09:45

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
02 Oct 2024 07:47:41

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NO1861	NO1862	NO1863		
Sampling Date		2024/09/12 00:00	2024/09/14 00:00	2024/09/16 00:00		
COC Number		148451	148451	148451		
	Units	NG0486-01 (AQS2)	NG0476-01 (AQS4)	NG0479-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1946	0.1860	0.1906	0.0002	2573217
Weight of filter and sample	g	0.1950	0.1861	0.1908	0.0002	2573217
Total particles	g	0.0004	<0.0002	0.0002	0.0002	2573217

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C455190
Report Date: 2024/10/02

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 149139

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/09
Report #: R2985883
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C457584
Received: 2024/10/02, 09:00

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	2	2024/10/08	2024/10/08	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 149139

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/09
Report #: R2985883
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C457584
Received: 2024/10/02, 09:00

Encryption Key

Bureau Veritas
09 Oct 2024 08:38:14

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NP4979	NP4980		
Sampling Date		2024/09/24 00:00	2024/09/26 00:00		
COC Number		149139	149139		
	Units	NG0488-01 (AQS2)	NG0492-01(AQS6)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.1892	0.1940	0.0002	2577136
Weight of filter and sample	g	0.1894	0.1940	0.0002	2577136
Total particles	g	0.0002	<0.0002	0.0002	2577136

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C457584
Report Date: 2024/10/09

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

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Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 150598

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/22
Report #: R2991385
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C460998
Received: 2024/10/15, 13:30

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	2	2024/10/22	2024/10/22	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 150598

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/22
Report #: R2991385
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C460998
Received: 2024/10/15, 13:30

Encryption Key

Bureau Veritas
22 Oct 2024 12:26:04

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NR3254	NR3255		
Sampling Date		2024/10/06 00:00	2024/10/10 00:00		
COC Number		150598	150598		
	Units	NG0485-01 (AQS2)	NG0493-01(AQS6)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.1814	0.1972	0.0002	2582939
Weight of filter and sample	g	0.1816	0.1974	0.0002	2582939
Total particles	g	0.0002	0.0002	0.0002	2582939

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C460998
Report Date: 2024/10/22

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 153314

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/05
Report #: R2995725
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463682
Received: 2024/10/30, 09:00

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	2	2024/11/01	2024/11/01	STL SOP-00045	MA100– Part 1.0 R4 m

Remarks:

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Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: PM2.5
Site Location: DSO3-DSO4
Your C.O.C. #: 153314

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/05
Report #: R2995725
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463682
Received: 2024/10/30, 09:00

Encryption Key

Bureau Veritas
05 Nov 2024 07:52:26

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Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NS8018	NS8019		
Sampling Date		2024/10/18 00:00	2024/10/22 00:00		
COC Number		153314	153314		
	Units	NG0484-01 (AQS2)	NG0472-01(AQS6)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.2026	0.1996	0.0002	2588066
Weight of filter and sample	g	0.2026	0.1999	0.0002	2588066
Total particles	g	<0.0002	0.0003	0.0002	2588066

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C463682
Report Date: 2024/11/05

TATA STEEL MINERALS CANADA
Client Project #: PM2.5
Site Location: DSO3-DSO4
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 135801

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/26
Report #: R2964193
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C431930
Received: 2024/06/18, 09:30

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	2	2024/06/20	2024/06/20	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	2	2024/07/25	2024/07/26	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	2	2024/07/23	2024/07/23	CAM SOP-00447	EPA 6020B m

Remarks:

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Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 135801

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/26
Report #: R2964193
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C431930
Received: 2024/06/18, 09:30

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
26 Jul 2024 23:18:56

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		ND1401	ND1402		
Sampling Date		2024/06/08 00:00	2024/06/10 00:00		
COC Number		135801	135801		
	Units	**MH-0824-01(AQS2)**	**MH0828-01 (AQS4)**	**RDL**	**QC Batch**
CONVENTIONALS					
Weight of filter	g	0.1614	0.1642	0.0002	2535094
Weight of filter and sample	g	0.1619	0.1635	0.0002	2535094
Total particles	g	0.0005	<0.0002	0.0002	2535094

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770
Sampler Initials: DH

SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		ND1401	ND1402		
Sampling Date		2024/06/08 00:00	2024/06/10 00:00		
COC Number		135801	135801		
	Units	MH-0824-01(AQS2)	MH0828-01 (AQS4)	RDL	QC Batch
METALS					
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	0.0025	2549442
Total Extractable Chromium (Cr) †	ug	0.11	0.084	0.050	2549443
Total Extractable Copper (Cu) †	ug	<0.030	<0.030	0.030	2549443
Total Extractable Iron (Fe) †	ug	22	<5.0	5.0	2549443
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	0.030	2549443
Total Extractable Manganese (Mn) †	ug	1.3	<0.050	0.050	2549443
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	0.050	2549443
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	0.050	2549443
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	0.010	2549443
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	0.050	2549443
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	0.010	2549443
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	0.030	2549443
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	0.50	2549443
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	0.050	2549443
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	0.030	2549443
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	0.010	2549443

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

CONVENTIONAL PARAMETERS (FILTER)

Particules Totales: Les résultats bruts non-arrondis sont utilisés dans le calcul des particules totales. Ce résultat total est alors arrondi à trois chiffres significatifs.

Particules Totales: Echantillon ND1402, bien que le filtre ne soit pas endommagé, la valeur calculée de "Particules Totales" est en-deçà de l'acceptabilité négative et montrent <LDR. Possibilité de sous-estimation des résultats.

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2549442	éCV	Spiked Blank	Acid extractable Mercury (Hg)	2024/07/26		102	%
2549442	éCV	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/07/26		102	%
2549442	éCV	Method Blank	Acid extractable Mercury (Hg)	2024/07/26	<0.0025		ug
2549443	TLG	Reagent Blank	Total Extractable Chromium (Cr)	2024/07/23	0.13, RDL=0.050		ug
			Total Extractable Copper (Cu)	2024/07/23	0.044, RDL=0.030		ug
			Total Extractable Iron (Fe)	2024/07/23	<5.0		ug
			Total Extractable Lead (Pb)	2024/07/23	<0.030		ug
			Total Extractable Manganese (Mn)	2024/07/23	<0.050		ug
			Total Extractable Antimony (Sb)	2024/07/23	<0.050		ug
			Total Extractable Nickel (Ni)	2024/07/23	<0.050		ug
			Total Extractable Silver (Ag)	2024/07/23	<0.010		ug
			Total Extractable Arsenic (As)	2024/07/23	<0.050		ug
			Total Extractable Thallium (Tl)	2024/07/23	<0.010		ug
			Total Extractable Vanadium (V)	2024/07/23	<0.030		ug
			Total Extractable Zinc (Zn)	2024/07/23	<0.50		ug
			Total Extractable Barium (Ba)	2024/07/23	<0.050		ug
			Total Extractable Beryllium (Be)	2024/07/23	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/07/23	<0.010		ug
2549443	TLG	Matrix Spike	Total Extractable Chromium (Cr)	2024/07/23		94	%
			Total Extractable Copper (Cu)	2024/07/23		102	%
			Total Extractable Iron (Fe)	2024/07/23		100	%
			Total Extractable Lead (Pb)	2024/07/23		100	%
			Total Extractable Manganese (Mn)	2024/07/23		97	%
			Total Extractable Antimony (Sb)	2024/07/23		96	%
			Total Extractable Nickel (Ni)	2024/07/23		100	%
			Total Extractable Silver (Ag)	2024/07/23		93	%
			Total Extractable Arsenic (As)	2024/07/23		96	%
			Total Extractable Thallium (Tl)	2024/07/23		105	%
			Total Extractable Vanadium (V)	2024/07/23		95	%
			Total Extractable Zinc (Zn)	2024/07/23		97	%
			Total Extractable Barium (Ba)	2024/07/23		96	%
			Total Extractable Beryllium (Be)	2024/07/23		100	%
			Total Extractable Cadmium (Cd)	2024/07/23		93	%
2549443	TLG	Matrix Spike DUP	Total Extractable Chromium (Cr)	2024/07/23		95	%
			Total Extractable Copper (Cu)	2024/07/23		101	%
			Total Extractable Iron (Fe)	2024/07/23		101	%
			Total Extractable Lead (Pb)	2024/07/23		100	%
			Total Extractable Manganese (Mn)	2024/07/23		98	%
			Total Extractable Antimony (Sb)	2024/07/23		96	%
			Total Extractable Nickel (Ni)	2024/07/23		102	%
			Total Extractable Silver (Ag)	2024/07/23		95	%
			Total Extractable Arsenic (As)	2024/07/23		97	%
			Total Extractable Thallium (Tl)	2024/07/23		106	%
			Total Extractable Vanadium (V)	2024/07/23		97	%
			Total Extractable Zinc (Zn)	2024/07/23		97	%
			Total Extractable Barium (Ba)	2024/07/23		95	%
			Total Extractable Beryllium (Be)	2024/07/23		105	%
			Total Extractable Cadmium (Cd)	2024/07/23		95	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2549443	TLG	Spiked Blank	Total Extractable Chromium (Cr)	2024/07/23		94	%
			Total Extractable Copper (Cu)	2024/07/23		102	%
			Total Extractable Iron (Fe)	2024/07/23		100	%
			Total Extractable Lead (Pb)	2024/07/23		99	%
			Total Extractable Manganese (Mn)	2024/07/23		96	%
			Total Extractable Antimony (Sb)	2024/07/23		91	%
			Total Extractable Nickel (Ni)	2024/07/23		100	%
			Total Extractable Silver (Ag)	2024/07/23		90	%
			Total Extractable Arsenic (As)	2024/07/23		96	%
			Total Extractable Thallium (Tl)	2024/07/23		103	%
			Total Extractable Vanadium (V)	2024/07/23		95	%
			Total Extractable Zinc (Zn)	2024/07/23		95	%
			Total Extractable Barium (Ba)	2024/07/23		97	%
			Total Extractable Beryllium (Be)	2024/07/23		101	%
			Total Extractable Cadmium (Cd)	2024/07/23		93	%
2549443	TLG	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/07/23		91	%
			Total Extractable Copper (Cu)	2024/07/23		102	%
			Total Extractable Iron (Fe)	2024/07/23		97	%
			Total Extractable Lead (Pb)	2024/07/23		97	%
			Total Extractable Manganese (Mn)	2024/07/23		95	%
			Total Extractable Antimony (Sb)	2024/07/23		95	%
			Total Extractable Nickel (Ni)	2024/07/23		98	%
			Total Extractable Silver (Ag)	2024/07/23		89	%
			Total Extractable Arsenic (As)	2024/07/23		94	%
			Total Extractable Thallium (Tl)	2024/07/23		100	%
			Total Extractable Vanadium (V)	2024/07/23		92	%
			Total Extractable Zinc (Zn)	2024/07/23		94	%
			Total Extractable Barium (Ba)	2024/07/23		91	%
			Total Extractable Beryllium (Be)	2024/07/23		103	%
			Total Extractable Cadmium (Cd)	2024/07/23		91	%
2549443	TLG	Method Blank	Total Extractable Chromium (Cr)	2024/07/23	<0.050		ug
			Total Extractable Copper (Cu)	2024/07/23	<0.030		ug
			Total Extractable Iron (Fe)	2024/07/23	<5.0		ug
			Total Extractable Lead (Pb)	2024/07/23	<0.030		ug
			Total Extractable Manganese (Mn)	2024/07/23	<0.050		ug
			Total Extractable Antimony (Sb)	2024/07/23	<0.050		ug
			Total Extractable Nickel (Ni)	2024/07/23	<0.050		ug
			Total Extractable Silver (Ag)	2024/07/23	<0.010		ug
			Total Extractable Arsenic (As)	2024/07/23	<0.050		ug
			Total Extractable Thallium (Tl)	2024/07/23	<0.010		ug
			Total Extractable Vanadium (V)	2024/07/23	<0.030		ug
			Total Extractable Zinc (Zn)	2024/07/23	<0.50		ug
			Total Extractable Barium (Ba)	2024/07/23	<0.050		ug
			Total Extractable Beryllium (Be)	2024/07/23	<0.030		ug

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Cadmium (Cd)	2024/07/23	<0.010		ug

RDL = Reportable Detection Limit

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C431930
Report Date: 2024/07/26

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770
Sampler Initials: DH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Scientific Services

CHIMISTE
Shu Yang
2008-014
QUÉBEC

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 137537

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/26
Report #: R2964194
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C433548
Received: 2024/06/26, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/06/29	2024/06/29	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	3	2024/07/25	2024/07/26	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	3	2024/07/23	2024/07/23	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 137537

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/07/26
Report #: R2964194
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C433548
Received: 2024/06/26, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
26 Jul 2024 23:22:37

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		ND8970	ND8971	ND8972		
Sampling Date		2024/06/20 00:00	2024/06/22 00:00	2024/06/24 00:00		
COC Number		137537	137537	137537		
	Units	MH-0823-01(AQS2)	MH0827-01 (AQS4)	MH-0816 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1761	0.1771	0.1578	0.0002	2538644
Weight of filter and sample	g	0.1759	0.1771	0.1579	0.0002	2538644
Total particles	g	<0.0002	<0.0002	<0.0002	0.0002	2538644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C433548
Report Date: 2024/07/26

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770
Sampler Initials: IG

SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		ND8970	ND8971	ND8972		
Sampling Date		2024/06/20 00:00	2024/06/22 00:00	2024/06/24 00:00		
COC Number		137537	137537	137537		
	Units	MH-0823-01(AQS2)	MH0827-01 (AQS4)	MH-0816 (AQS6)	RDL	QC Batch
METALS						
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	<0.0025	0.0025	2549442
Total Extractable Chromium (Cr) †	ug	0.10	0.12	0.098	0.050	2549443
Total Extractable Copper (Cu) †	ug	<0.030	<0.030	<0.030	0.030	2549443
Total Extractable Iron (Fe) †	ug	<5.0	<5.0	8.4	5.0	2549443
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	0.030	2549443
Total Extractable Manganese (Mn) †	ug	<0.050	0.29	0.57	0.050	2549443
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	0.050	2549443
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	<0.050	0.050	2549443
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	0.010	2549443
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	0.050	2549443
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	0.010	2549443
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	0.030	2549443
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	0.50	2549443
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	0.050	2549443
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	0.030	2549443
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	0.010	2549443

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770
Sampler Initials: IG

GENERAL COMMENTS

CONVENTIONAL PARAMETERS (FILTER)

Particules Totales: Les résultats bruts non-arrondis sont utilisés dans le calcul des particules totales. Ce résultat total est alors arrondi à trois chiffres significatifs.

Particules Totales : Veuillez noter que le filtre de ND8972 a été reçu endommagé. Possibilité de sous-estimation des résultats.

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2549442	éCV	Spiked Blank	Acid extractable Mercury (Hg)	2024/07/26		102	%
2549442	éCV	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/07/26		102	%
2549442	éCV	Method Blank	Acid extractable Mercury (Hg)	2024/07/26	<0.0025		ug
2549443	TLG	Reagent Blank	Total Extractable Chromium (Cr)	2024/07/23	0.13, RDL=0.050		ug
			Total Extractable Copper (Cu)	2024/07/23	0.044, RDL=0.030		ug
			Total Extractable Iron (Fe)	2024/07/23	<5.0		ug
			Total Extractable Lead (Pb)	2024/07/23	<0.030		ug
			Total Extractable Manganese (Mn)	2024/07/23	<0.050		ug
			Total Extractable Antimony (Sb)	2024/07/23	<0.050		ug
			Total Extractable Nickel (Ni)	2024/07/23	<0.050		ug
			Total Extractable Silver (Ag)	2024/07/23	<0.010		ug
			Total Extractable Arsenic (As)	2024/07/23	<0.050		ug
			Total Extractable Thallium (Tl)	2024/07/23	<0.010		ug
			Total Extractable Vanadium (V)	2024/07/23	<0.030		ug
			Total Extractable Zinc (Zn)	2024/07/23	<0.50		ug
			Total Extractable Barium (Ba)	2024/07/23	<0.050		ug
			Total Extractable Beryllium (Be)	2024/07/23	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/07/23	<0.010		ug
2549443	TLG	Matrix Spike	Total Extractable Chromium (Cr)	2024/07/23		94	%
			Total Extractable Copper (Cu)	2024/07/23		102	%
			Total Extractable Iron (Fe)	2024/07/23		100	%
			Total Extractable Lead (Pb)	2024/07/23		100	%
			Total Extractable Manganese (Mn)	2024/07/23		97	%
			Total Extractable Antimony (Sb)	2024/07/23		96	%
			Total Extractable Nickel (Ni)	2024/07/23		100	%
			Total Extractable Silver (Ag)	2024/07/23		93	%
			Total Extractable Arsenic (As)	2024/07/23		96	%
			Total Extractable Thallium (Tl)	2024/07/23		105	%
			Total Extractable Vanadium (V)	2024/07/23		95	%
			Total Extractable Zinc (Zn)	2024/07/23		97	%
			Total Extractable Barium (Ba)	2024/07/23		96	%
			Total Extractable Beryllium (Be)	2024/07/23		100	%
			Total Extractable Cadmium (Cd)	2024/07/23		93	%
2549443	TLG	Matrix Spike DUP	Total Extractable Chromium (Cr)	2024/07/23		95	%
			Total Extractable Copper (Cu)	2024/07/23		101	%
			Total Extractable Iron (Fe)	2024/07/23		101	%
			Total Extractable Lead (Pb)	2024/07/23		100	%
			Total Extractable Manganese (Mn)	2024/07/23		98	%
			Total Extractable Antimony (Sb)	2024/07/23		96	%
			Total Extractable Nickel (Ni)	2024/07/23		102	%
			Total Extractable Silver (Ag)	2024/07/23		95	%
			Total Extractable Arsenic (As)	2024/07/23		97	%
			Total Extractable Thallium (Tl)	2024/07/23		106	%
			Total Extractable Vanadium (V)	2024/07/23		97	%
			Total Extractable Zinc (Zn)	2024/07/23		97	%
			Total Extractable Barium (Ba)	2024/07/23		95	%
			Total Extractable Beryllium (Be)	2024/07/23		105	%
			Total Extractable Cadmium (Cd)	2024/07/23		95	%

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2549443	TLG	Spiked Blank	Total Extractable Chromium (Cr)	2024/07/23		94	%
			Total Extractable Copper (Cu)	2024/07/23		102	%
			Total Extractable Iron (Fe)	2024/07/23		100	%
			Total Extractable Lead (Pb)	2024/07/23		99	%
			Total Extractable Manganese (Mn)	2024/07/23		96	%
			Total Extractable Antimony (Sb)	2024/07/23		91	%
			Total Extractable Nickel (Ni)	2024/07/23		100	%
			Total Extractable Silver (Ag)	2024/07/23		90	%
			Total Extractable Arsenic (As)	2024/07/23		96	%
			Total Extractable Thallium (Tl)	2024/07/23		103	%
			Total Extractable Vanadium (V)	2024/07/23		95	%
			Total Extractable Zinc (Zn)	2024/07/23		95	%
			Total Extractable Barium (Ba)	2024/07/23		97	%
			Total Extractable Beryllium (Be)	2024/07/23		101	%
			Total Extractable Cadmium (Cd)	2024/07/23		93	%
2549443	TLG	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/07/23		91	%
			Total Extractable Copper (Cu)	2024/07/23		102	%
			Total Extractable Iron (Fe)	2024/07/23		97	%
			Total Extractable Lead (Pb)	2024/07/23		97	%
			Total Extractable Manganese (Mn)	2024/07/23		95	%
			Total Extractable Antimony (Sb)	2024/07/23		95	%
			Total Extractable Nickel (Ni)	2024/07/23		98	%
			Total Extractable Silver (Ag)	2024/07/23		89	%
			Total Extractable Arsenic (As)	2024/07/23		94	%
			Total Extractable Thallium (Tl)	2024/07/23		100	%
			Total Extractable Vanadium (V)	2024/07/23		92	%
			Total Extractable Zinc (Zn)	2024/07/23		94	%
			Total Extractable Barium (Ba)	2024/07/23		91	%
			Total Extractable Beryllium (Be)	2024/07/23		103	%
			Total Extractable Cadmium (Cd)	2024/07/23		91	%
2549443	TLG	Method Blank	Total Extractable Chromium (Cr)	2024/07/23	<0.050		ug
			Total Extractable Copper (Cu)	2024/07/23	<0.030		ug
			Total Extractable Iron (Fe)	2024/07/23	<5.0		ug
			Total Extractable Lead (Pb)	2024/07/23	<0.030		ug
			Total Extractable Manganese (Mn)	2024/07/23	<0.050		ug
			Total Extractable Antimony (Sb)	2024/07/23	<0.050		ug
			Total Extractable Nickel (Ni)	2024/07/23	<0.050		ug
			Total Extractable Silver (Ag)	2024/07/23	<0.010		ug
			Total Extractable Arsenic (As)	2024/07/23	<0.050		ug
			Total Extractable Thallium (Tl)	2024/07/23	<0.010		ug
			Total Extractable Vanadium (V)	2024/07/23	<0.030		ug
			Total Extractable Zinc (Zn)	2024/07/23	<0.50		ug
			Total Extractable Barium (Ba)	2024/07/23	<0.050		ug
			Total Extractable Beryllium (Be)	2024/07/23	<0.030		ug

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Cadmium (Cd)	2024/07/23	<0.010		ug

RDL = Reportable Detection Limit

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C433548
Report Date: 2024/07/26

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770
Sampler Initials: IG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Scientific Services

CHIMISTE
Shu Yang
2008-014
QUÉBEC

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 140685

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/28
Report #: R2973557
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C440810
Received: 2024/07/24, 11:45

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	6	2024/07/30	2024/07/30	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	6	2024/08/26	2024/08/27	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	6	2024/08/20	2024/08/20	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 140685

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/08/28
Report #: R2973557
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C440810
Received: 2024/07/24, 11:45

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
28 Aug 2024 11:08:14

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NH4333	NH4334	NH4335	NH4336		
Sampling Date		2024/07/14 00:00	2024/07/16 00:00	2024/07/06 00:00	2024/07/18 00:00		
COC Number		140685	140685	140685	140685		
	Units	ND6111-01(AQS2)	ND6107-01 (AQS4)	MH0818-01 (AQS6)	ND6106-01 (AQS6)	RDL	QC Batch
CONVENTIONALS							
Weight of filter	g	0.1736	0.1717	0.1751	0.1710	0.0002	2550111
Weight of filter and sample	g	0.1738	0.1718	0.1756	0.1652	0.0002	2550111
Total particles	g	0.0002	<0.0002	0.0005	<0.0002	0.0002	2550111

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		NH4337	NH4338		
Sampling Date		2024/07/02 00:00	2024/07/04 00:00		
COC Number		140685	140685		
	Units	MH0820-01 (AQS2)	MH0813-01 (AQS4)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.1600	0.1437	0.0002	2550111
Weight of filter and sample	g	0.1602	0.1445	0.0002	2550111
Total particles	g	0.0002	0.0008	0.0002	2550111

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NH4333	NH4333	NH4334	NH4335		
Sampling Date		2024/07/14 00:00	2024/07/14 00:00	2024/07/16 00:00	2024/07/06 00:00		
COC Number		140685	140685	140685	140685		
	Units	ND6111-01(AQS2)	ND6111-01(AQS2) Lab-Dup	ND6107-01 (AQS4)	MH0818-01 (AQS6)	RDL	QC Batch
METALS							
Acid extractable Mercury (Hg) †	ug	<0.0025	N/A	<0.0025	<0.0025	0.0025	2560980
Total Extractable Chromium (Cr) †	ug	0.070	0.072	0.084	0.088	0.050	2560981
Total Extractable Copper (Cu) †	ug	0.063	0.063	0.050	<0.030	0.030	2560981
Total Extractable Iron (Fe) †	ug	<5.0	<5.0	<5.0	<5.0	5.0	2560981
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2560981
Total Extractable Manganese (Mn) †	ug	<0.050	<0.050	<0.050	0.25	0.050	2560981
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2560981
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2560981
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2560981
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	<0.50	0.50	2560981
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2560981
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2560981

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

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SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NH4336	NH4337	NH4338		
Sampling Date		2024/07/18 00:00	2024/07/02 00:00	2024/07/04 00:00		
COC Number		140685	140685	140685		
	Units	ND6106-01 (AQS6)	MH0820-01 (AQS2)	MH0813-01 (AQS4)	RDL	QC Batch
METALS						
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	<0.0025	0.0025	2560980
Total Extractable Chromium (Cr) †	ug	0.078	0.095	0.095	0.050	2560981
Total Extractable Copper (Cu) †	ug	<0.030	<0.030	<0.030	0.030	2560981
Total Extractable Iron (Fe) †	ug	<5.0	<5.0	<5.0	5.0	2560981
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	0.030	2560981
Total Extractable Manganese (Mn) †	ug	<0.050	0.079	<0.050	0.050	2560981
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	0.010	2560981
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	0.010	2560981
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	0.030	2560981
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	0.50	2560981
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	0.050	2560981
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	0.030	2560981
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	0.010	2560981

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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GENERAL COMMENTS

CONVENTIONAL PARAMETERS (FILTER)

Total Particles: Although the filter is not damaged, the calculated value of “Total Particles” is below the negative acceptability and shows <RDL; possible results underestimation for NH4336.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2560980	ANF	Spiked Blank	Acid extractable Mercury (Hg)	2024/08/27		108	%
2560980	ANF	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/08/27		107	%
2560980	ANF	Method Blank	Acid extractable Mercury (Hg)	2024/08/27	<0.0025		ug
2560981	é2Z	Reagent Blank	Total Extractable Chromium (Cr)	2024/08/20	0.058, RDL=0.050		ug
			Total Extractable Copper (Cu)	2024/08/20	0.035, RDL=0.030		ug
			Total Extractable Iron (Fe)	2024/08/20	<5.0		ug
			Total Extractable Lead (Pb)	2024/08/20	<0.030		ug
			Total Extractable Manganese (Mn)	2024/08/20	<0.050		ug
			Total Extractable Antimony (Sb)	2024/08/20	<0.050		ug
			Total Extractable Nickel (Ni)	2024/08/20	<0.050		ug
			Total Extractable Silver (Ag)	2024/08/20	<0.010		ug
			Total Extractable Arsenic (As)	2024/08/20	<0.050		ug
			Total Extractable Thallium (Tl)	2024/08/20	<0.010		ug
			Total Extractable Vanadium (V)	2024/08/20	<0.030		ug
			Total Extractable Zinc (Zn)	2024/08/20	<0.50		ug
			Total Extractable Barium (Ba)	2024/08/20	<0.050		ug
			Total Extractable Beryllium (Be)	2024/08/20	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/08/20	<0.010		ug
2560981	é2Z	Matrix Spike [NH4333-01]	Total Extractable Chromium (Cr)	2024/08/20		99	%
			Total Extractable Copper (Cu)	2024/08/20		99	%
			Total Extractable Iron (Fe)	2024/08/20		103	%
			Total Extractable Lead (Pb)	2024/08/20		99	%
			Total Extractable Manganese (Mn)	2024/08/20		99	%
			Total Extractable Antimony (Sb)	2024/08/20		100	%
			Total Extractable Nickel (Ni)	2024/08/20		98	%
			Total Extractable Silver (Ag)	2024/08/20		98	%
			Total Extractable Arsenic (As)	2024/08/20		99	%
			Total Extractable Thallium (Tl)	2024/08/20		99	%
			Total Extractable Vanadium (V)	2024/08/20		100	%
			Total Extractable Zinc (Zn)	2024/08/20		96	%
			Total Extractable Barium (Ba)	2024/08/20		97	%
			Total Extractable Beryllium (Be)	2024/08/20		99	%
			Total Extractable Cadmium (Cd)	2024/08/20		96	%
2560981	é2Z	Matrix Spike DUP [NH4333-01]	Total Extractable Chromium (Cr)	2024/08/20		96	%
			Total Extractable Copper (Cu)	2024/08/20		98	%
			Total Extractable Iron (Fe)	2024/08/20		100	%
			Total Extractable Lead (Pb)	2024/08/20		96	%
			Total Extractable Manganese (Mn)	2024/08/20		95	%
			Total Extractable Antimony (Sb)	2024/08/20		99	%
			Total Extractable Nickel (Ni)	2024/08/20		95	%
			Total Extractable Silver (Ag)	2024/08/20		96	%
			Total Extractable Arsenic (As)	2024/08/20		97	%
			Total Extractable Thallium (Tl)	2024/08/20		95	%
			Total Extractable Vanadium (V)	2024/08/20		97	%
			Total Extractable Zinc (Zn)	2024/08/20		95	%
			Total Extractable Barium (Ba)	2024/08/20		97	%
			Total Extractable Beryllium (Be)	2024/08/20		98	%
			Total Extractable Cadmium (Cd)	2024/08/20		94	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2560981	é2Z	Spiked Blank	Total Extractable Chromium (Cr)	2024/08/20		93	%
			Total Extractable Copper (Cu)	2024/08/20		96	%
			Total Extractable Iron (Fe)	2024/08/20		99	%
			Total Extractable Lead (Pb)	2024/08/20		96	%
			Total Extractable Manganese (Mn)	2024/08/20		94	%
			Total Extractable Antimony (Sb)	2024/08/20		93	%
			Total Extractable Nickel (Ni)	2024/08/20		93	%
			Total Extractable Silver (Ag)	2024/08/20		91	%
			Total Extractable Arsenic (As)	2024/08/20		94	%
			Total Extractable Thallium (Tl)	2024/08/20		93	%
			Total Extractable Vanadium (V)	2024/08/20		94	%
			Total Extractable Zinc (Zn)	2024/08/20		91	%
			Total Extractable Barium (Ba)	2024/08/20		94	%
			Total Extractable Beryllium (Be)	2024/08/20		94	%
			Total Extractable Cadmium (Cd)	2024/08/20		91	%
2560981	é2Z	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/08/20		92	%
			Total Extractable Copper (Cu)	2024/08/20		97	%
			Total Extractable Iron (Fe)	2024/08/20		97	%
			Total Extractable Lead (Pb)	2024/08/20		96	%
			Total Extractable Manganese (Mn)	2024/08/20		94	%
			Total Extractable Antimony (Sb)	2024/08/20		96	%
			Total Extractable Nickel (Ni)	2024/08/20		92	%
			Total Extractable Silver (Ag)	2024/08/20		92	%
			Total Extractable Arsenic (As)	2024/08/20		93	%
			Total Extractable Thallium (Tl)	2024/08/20		94	%
			Total Extractable Vanadium (V)	2024/08/20		93	%
			Total Extractable Zinc (Zn)	2024/08/20		90	%
			Total Extractable Barium (Ba)	2024/08/20		93	%
			Total Extractable Beryllium (Be)	2024/08/20		95	%
			Total Extractable Cadmium (Cd)	2024/08/20		92	%
2560981	é2Z	Method Blank	Total Extractable Chromium (Cr)	2024/08/20	<0.050		ug
			Total Extractable Copper (Cu)	2024/08/20	<0.030		ug
			Total Extractable Iron (Fe)	2024/08/20	<5.0		ug
			Total Extractable Lead (Pb)	2024/08/20	<0.030		ug
			Total Extractable Manganese (Mn)	2024/08/20	<0.050		ug
			Total Extractable Antimony (Sb)	2024/08/20	<0.050		ug
			Total Extractable Nickel (Ni)	2024/08/20	<0.050		ug
			Total Extractable Silver (Ag)	2024/08/20	<0.010		ug
			Total Extractable Arsenic (As)	2024/08/20	<0.050		ug
			Total Extractable Thallium (Tl)	2024/08/20	<0.010		ug
			Total Extractable Vanadium (V)	2024/08/20	<0.030		ug
			Total Extractable Zinc (Zn)	2024/08/20	<0.50		ug
			Total Extractable Barium (Ba)	2024/08/20	<0.050		ug
			Total Extractable Beryllium (Be)	2024/08/20	<0.030		ug

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Cadmium (Cd)	2024/08/20	<0.010		ug

RDL = Reportable Detection Limit

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C440810
Report Date: 2024/08/28

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Scientific Services

CHIMISTE Shu Yang 2008-014 QUÉBEC

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 142064

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/04
Report #: R2975239
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C444188
Received: 2024/08/08, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/08/14	2024/08/14	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	1	2024/08/26	2024/09/03	BRL SOP-00104	EPA 7470A m
Mercury (CVAA) in filters (1)	2	2024/08/29	2024/09/03	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	3	2024/08/28	2024/08/30	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 142064

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/04
Report #: R2975239
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C444188
Received: 2024/08/08, 09:00

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AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
04 Sep 2024 11:02:12

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Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NI9294	NI9295	NI9296		
Sampling Date		2024/07/26 00:00	2024/07/28 00:00	2024/07/30 00:00		
COC Number		142064	142064	142064		
	Units	MH0825-01(AQS2)	ND6109-01 (AQS4)	ND6110-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1556	0.1600	0.1654	0.0002	2555997
Weight of filter and sample	g	0.1560	0.1606	0.1661	0.0002	2555997
Total particles	g	0.0004	0.0006	0.0007	0.0002	2555997

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NI9294	NI9295	NI9295	NI9296		
Sampling Date		2024/07/26 00:00	2024/07/28 00:00	2024/07/28 00:00	2024/07/30 00:00		
COC Number		142064	142064	142064	142064		
	Units	MH0825-01(AQS2)	ND6109-01 (AQS4)	ND6109-01 (AQS4) Lab-Dup	ND6110-01 (AQS6)	RDL	QC Batch
METALS							
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	N/A	<0.0025	0.0025	2563034
Total Extractable Chromium (Cr) †	ug	0.13	0.089	0.088	0.071	0.050	2563035
Total Extractable Copper (Cu) †	ug	0.070	<0.030	<0.030	<0.030	0.030	2563035
Total Extractable Iron (Fe) †	ug	<5.0	11	11	12	5.0	2563035
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2563035
Total Extractable Manganese (Mn) †	ug	<0.050	0.69	0.68	1.9	0.050	2563035
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2563035
Total Extractable Nickel (Ni) †	ug	0.074	<0.050	<0.050	<0.050	0.050	2563035
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2563035
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2563035
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2563035
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2563035
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	<0.50	0.50	2563035
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2563035
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2563035
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2563035

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2563034	ANF	Spiked Blank	Acid extractable Mercury (Hg)	2024/09/03		105	%
2563034	ANF	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/09/03		107	%
2563034	ANF	Method Blank	Acid extractable Mercury (Hg)	2024/09/03	<0.0025		ug
2563035	IHP	Reagent Blank	Total Extractable Chromium (Cr)	2024/08/30	<0.050		ug
			Total Extractable Copper (Cu)	2024/08/30	0.032, RDL=0.030		ug
			Total Extractable Iron (Fe)	2024/08/30	<5.0		ug
			Total Extractable Lead (Pb)	2024/08/30	<0.030		ug
			Total Extractable Manganese (Mn)	2024/08/30	<0.050		ug
			Total Extractable Antimony (Sb)	2024/08/30	<0.050		ug
			Total Extractable Nickel (Ni)	2024/08/30	<0.050		ug
			Total Extractable Silver (Ag)	2024/08/30	<0.010		ug
			Total Extractable Arsenic (As)	2024/08/30	<0.050		ug
			Total Extractable Thallium (Tl)	2024/08/30	<0.010		ug
			Total Extractable Vanadium (V)	2024/08/30	<0.030		ug
			Total Extractable Zinc (Zn)	2024/08/30	<0.50		ug
			Total Extractable Barium (Ba)	2024/08/30	<0.050		ug
			Total Extractable Beryllium (Be)	2024/08/30	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/08/30	<0.010		ug
2563035	IHP	Matrix Spike [NI9295-01]	Total Extractable Chromium (Cr)	2024/08/30		104	%
			Total Extractable Copper (Cu)	2024/08/30		103	%
			Total Extractable Iron (Fe)	2024/08/30		104	%
			Total Extractable Lead (Pb)	2024/08/30		99	%
			Total Extractable Manganese (Mn)	2024/08/30		98	%
			Total Extractable Antimony (Sb)	2024/08/30		98	%
			Total Extractable Nickel (Ni)	2024/08/30		98	%
			Total Extractable Silver (Ag)	2024/08/30		99	%
			Total Extractable Arsenic (As)	2024/08/30		102	%
			Total Extractable Thallium (Tl)	2024/08/30		102	%
			Total Extractable Vanadium (V)	2024/08/30		97	%
			Total Extractable Zinc (Zn)	2024/08/30		98	%
			Total Extractable Barium (Ba)	2024/08/30		101	%
			Total Extractable Beryllium (Be)	2024/08/30		109	%
			Total Extractable Cadmium (Cd)	2024/08/30		94	%
2563035	IHP	Matrix Spike DUP [NI9295-01]	Total Extractable Chromium (Cr)	2024/08/30		102	%
			Total Extractable Copper (Cu)	2024/08/30		102	%
			Total Extractable Iron (Fe)	2024/08/30		105	%
			Total Extractable Lead (Pb)	2024/08/30		98	%
			Total Extractable Manganese (Mn)	2024/08/30		95	%
			Total Extractable Antimony (Sb)	2024/08/30		99	%
			Total Extractable Nickel (Ni)	2024/08/30		97	%
			Total Extractable Silver (Ag)	2024/08/30		101	%
			Total Extractable Arsenic (As)	2024/08/30		100	%
			Total Extractable Thallium (Tl)	2024/08/30		100	%
			Total Extractable Vanadium (V)	2024/08/30		97	%
			Total Extractable Zinc (Zn)	2024/08/30		98	%
			Total Extractable Barium (Ba)	2024/08/30		100	%
			Total Extractable Beryllium (Be)	2024/08/30		110	%
			Total Extractable Cadmium (Cd)	2024/08/30		95	%
2563035	IHP	Spiked Blank	Total Extractable Chromium (Cr)	2024/08/30		94	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Copper (Cu)	2024/08/30		98	%
			Total Extractable Iron (Fe)	2024/08/30		98	%
			Total Extractable Lead (Pb)	2024/08/30		94	%
			Total Extractable Manganese (Mn)	2024/08/30		90	%
			Total Extractable Antimony (Sb)	2024/08/30		96	%
			Total Extractable Nickel (Ni)	2024/08/30		93	%
			Total Extractable Silver (Ag)	2024/08/30		96	%
			Total Extractable Arsenic (As)	2024/08/30		95	%
			Total Extractable Thallium (Tl)	2024/08/30		97	%
			Total Extractable Vanadium (V)	2024/08/30		91	%
			Total Extractable Zinc (Zn)	2024/08/30		91	%
			Total Extractable Barium (Ba)	2024/08/30		97	%
			Total Extractable Beryllium (Be)	2024/08/30		104	%
			Total Extractable Cadmium (Cd)	2024/08/30		90	%
2563035	IHP	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/08/30		96	%
			Total Extractable Copper (Cu)	2024/08/30		98	%
			Total Extractable Iron (Fe)	2024/08/30		97	%
			Total Extractable Lead (Pb)	2024/08/30		94	%
			Total Extractable Manganese (Mn)	2024/08/30		91	%
			Total Extractable Antimony (Sb)	2024/08/30		94	%
			Total Extractable Nickel (Ni)	2024/08/30		93	%
			Total Extractable Silver (Ag)	2024/08/30		94	%
			Total Extractable Arsenic (As)	2024/08/30		94	%
			Total Extractable Thallium (Tl)	2024/08/30		96	%
			Total Extractable Vanadium (V)	2024/08/30		91	%
			Total Extractable Zinc (Zn)	2024/08/30		91	%
			Total Extractable Barium (Ba)	2024/08/30		94	%
			Total Extractable Beryllium (Be)	2024/08/30		104	%
			Total Extractable Cadmium (Cd)	2024/08/30		90	%
2563035	IHP	Method Blank	Total Extractable Chromium (Cr)	2024/08/30	<0.050		ug
			Total Extractable Copper (Cu)	2024/08/30	<0.030		ug
			Total Extractable Iron (Fe)	2024/08/30	<5.0		ug
			Total Extractable Lead (Pb)	2024/08/30	<0.030		ug
			Total Extractable Manganese (Mn)	2024/08/30	<0.050		ug
			Total Extractable Antimony (Sb)	2024/08/30	<0.050		ug
			Total Extractable Nickel (Ni)	2024/08/30	<0.050		ug
			Total Extractable Silver (Ag)	2024/08/30	<0.010		ug
			Total Extractable Arsenic (As)	2024/08/30	<0.050		ug
			Total Extractable Thallium (Tl)	2024/08/30	<0.010		ug
			Total Extractable Vanadium (V)	2024/08/30	<0.030		ug
			Total Extractable Zinc (Zn)	2024/08/30	<0.50		ug
			Total Extractable Barium (Ba)	2024/08/30	<0.050		ug
			Total Extractable Beryllium (Be)	2024/08/30	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/08/30	<0.010		ug

RDL = Reportable Detection Limit

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C444188
Report Date: 2024/09/04

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere

Cristina Carriere, Scientific Services

Simran Kaur

CHIMISTE
Simran Kaur
2324-056
QUÉBEC

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 142533

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/04
Report #: R2975240
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C445141
Received: 2024/08/13, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/08/15	2024/08/15	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	3	2024/08/29	2024/09/03	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	3	2024/08/28	2024/08/30	CAM SOP-00447	EPA 6020B m

Remarks:

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Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 142533

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/04
Report #: R2975240
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C445141
Received: 2024/08/13, 09:00

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AUTHORIZED REPORT
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Bureau Veritas
04 Sep 2024 11:02:20

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NJ3011	NJ3012	NJ3013		
Sampling Date		2024/08/07 00:00	2024/08/09 00:00	2024/08/11 00:00		
COC Number		142533	142533	142533		
	Units	MH7628-01(AQS2)	ND7630-01 (AQS4)	ND7635-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1829	0.1764	0.1894	0.0002	2556572
Weight of filter and sample	g	0.1829	0.1768	0.1902	0.0002	2556572
Total particles	g	<0.0002	0.0004	0.0008	0.0002	2556572

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NJ3011	NJ3012	NJ3013		
Sampling Date		2024/08/07 00:00	2024/08/09 00:00	2024/08/11 00:00		
COC Number		142533	142533	142533		
	Units	MH7628-01(AQS2)	ND7630-01 (AQS4)	ND7635-01 (AQS6)	RDL	QC Batch
METALS						
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	<0.0025	0.0025	2563034
Total Extractable Chromium (Cr) †	ug	0.096	0.10	0.097	0.050	2563035
Total Extractable Copper (Cu) †	ug	0.047	0.053	<0.030	0.030	2563035
Total Extractable Iron (Fe) †	ug	<5.0	6.7	37	5.0	2563035
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	0.030	2563035
Total Extractable Manganese (Mn) †	ug	<0.050	0.49	2.6	0.050	2563035
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	0.050	2563035
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	<0.050	0.050	2563035
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	0.010	2563035
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	0.050	2563035
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	0.010	2563035
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	0.030	2563035
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	0.50	2563035
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	0.067	0.050	2563035
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	0.030	2563035
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	0.010	2563035

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2563034	ANF	Spiked Blank	Acid extractable Mercury (Hg)	2024/09/03		105	%
2563034	ANF	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/09/03		107	%
2563034	ANF	Method Blank	Acid extractable Mercury (Hg)	2024/09/03	<0.0025		ug
2563035	IHP	Reagent Blank	Total Extractable Chromium (Cr)	2024/08/30	<0.050		ug
			Total Extractable Copper (Cu)	2024/08/30	0.032, RDL=0.030		ug
			Total Extractable Iron (Fe)	2024/08/30	<5.0		ug
			Total Extractable Lead (Pb)	2024/08/30	<0.030		ug
			Total Extractable Manganese (Mn)	2024/08/30	<0.050		ug
			Total Extractable Antimony (Sb)	2024/08/30	<0.050		ug
			Total Extractable Nickel (Ni)	2024/08/30	<0.050		ug
			Total Extractable Silver (Ag)	2024/08/30	<0.010		ug
			Total Extractable Arsenic (As)	2024/08/30	<0.050		ug
			Total Extractable Thallium (Tl)	2024/08/30	<0.010		ug
			Total Extractable Vanadium (V)	2024/08/30	<0.030		ug
			Total Extractable Zinc (Zn)	2024/08/30	<0.50		ug
			Total Extractable Barium (Ba)	2024/08/30	<0.050		ug
			Total Extractable Beryllium (Be)	2024/08/30	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/08/30	<0.010		ug
2563035	IHP	Matrix Spike	Total Extractable Chromium (Cr)	2024/08/30		104	%
			Total Extractable Copper (Cu)	2024/08/30		103	%
			Total Extractable Iron (Fe)	2024/08/30		104	%
			Total Extractable Lead (Pb)	2024/08/30		99	%
			Total Extractable Manganese (Mn)	2024/08/30		98	%
			Total Extractable Antimony (Sb)	2024/08/30		98	%
			Total Extractable Nickel (Ni)	2024/08/30		98	%
			Total Extractable Silver (Ag)	2024/08/30		99	%
			Total Extractable Arsenic (As)	2024/08/30		102	%
			Total Extractable Thallium (Tl)	2024/08/30		102	%
			Total Extractable Vanadium (V)	2024/08/30		97	%
			Total Extractable Zinc (Zn)	2024/08/30		98	%
			Total Extractable Barium (Ba)	2024/08/30		101	%
			Total Extractable Beryllium (Be)	2024/08/30		109	%
			Total Extractable Cadmium (Cd)	2024/08/30		94	%
2563035	IHP	Matrix Spike DUP	Total Extractable Chromium (Cr)	2024/08/30		102	%
			Total Extractable Copper (Cu)	2024/08/30		102	%
			Total Extractable Iron (Fe)	2024/08/30		105	%
			Total Extractable Lead (Pb)	2024/08/30		98	%
			Total Extractable Manganese (Mn)	2024/08/30		95	%
			Total Extractable Antimony (Sb)	2024/08/30		99	%
			Total Extractable Nickel (Ni)	2024/08/30		97	%
			Total Extractable Silver (Ag)	2024/08/30		101	%
			Total Extractable Arsenic (As)	2024/08/30		100	%
			Total Extractable Thallium (Tl)	2024/08/30		100	%
			Total Extractable Vanadium (V)	2024/08/30		97	%
			Total Extractable Zinc (Zn)	2024/08/30		98	%
			Total Extractable Barium (Ba)	2024/08/30		100	%
			Total Extractable Beryllium (Be)	2024/08/30		110	%
			Total Extractable Cadmium (Cd)	2024/08/30		95	%
2563035	IHP	Spiked Blank	Total Extractable Chromium (Cr)	2024/08/30		94	%
			Total Extractable Copper (Cu)	2024/08/30		98	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Iron (Fe)	2024/08/30		98	%
			Total Extractable Lead (Pb)	2024/08/30		94	%
			Total Extractable Manganese (Mn)	2024/08/30		90	%
			Total Extractable Antimony (Sb)	2024/08/30		96	%
			Total Extractable Nickel (Ni)	2024/08/30		93	%
			Total Extractable Silver (Ag)	2024/08/30		96	%
			Total Extractable Arsenic (As)	2024/08/30		95	%
			Total Extractable Thallium (Tl)	2024/08/30		97	%
			Total Extractable Vanadium (V)	2024/08/30		91	%
			Total Extractable Zinc (Zn)	2024/08/30		91	%
			Total Extractable Barium (Ba)	2024/08/30		97	%
			Total Extractable Beryllium (Be)	2024/08/30		104	%
			Total Extractable Cadmium (Cd)	2024/08/30		90	%
2563035	IHP	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/08/30		96	%
			Total Extractable Copper (Cu)	2024/08/30		98	%
			Total Extractable Iron (Fe)	2024/08/30		97	%
			Total Extractable Lead (Pb)	2024/08/30		94	%
			Total Extractable Manganese (Mn)	2024/08/30		91	%
			Total Extractable Antimony (Sb)	2024/08/30		94	%
			Total Extractable Nickel (Ni)	2024/08/30		93	%
			Total Extractable Silver (Ag)	2024/08/30		94	%
			Total Extractable Arsenic (As)	2024/08/30		94	%
			Total Extractable Thallium (Tl)	2024/08/30		96	%
			Total Extractable Vanadium (V)	2024/08/30		91	%
			Total Extractable Zinc (Zn)	2024/08/30		91	%
			Total Extractable Barium (Ba)	2024/08/30		94	%
			Total Extractable Beryllium (Be)	2024/08/30		104	%
			Total Extractable Cadmium (Cd)	2024/08/30		90	%
2563035	IHP	Method Blank	Total Extractable Chromium (Cr)	2024/08/30	<0.050		ug
			Total Extractable Copper (Cu)	2024/08/30	<0.030		ug
			Total Extractable Iron (Fe)	2024/08/30	<5.0		ug
			Total Extractable Lead (Pb)	2024/08/30	<0.030		ug
			Total Extractable Manganese (Mn)	2024/08/30	<0.050		ug
			Total Extractable Antimony (Sb)	2024/08/30	<0.050		ug
			Total Extractable Nickel (Ni)	2024/08/30	<0.050		ug
			Total Extractable Silver (Ag)	2024/08/30	<0.010		ug
			Total Extractable Arsenic (As)	2024/08/30	<0.050		ug
			Total Extractable Thallium (Tl)	2024/08/30	<0.010		ug
			Total Extractable Vanadium (V)	2024/08/30	<0.030		ug
			Total Extractable Zinc (Zn)	2024/08/30	<0.50		ug
			Total Extractable Barium (Ba)	2024/08/30	<0.050		ug
			Total Extractable Beryllium (Be)	2024/08/30	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/08/30	<0.010		ug

RDL = Reportable Detection Limit

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C445141
Report Date: 2024/09/04

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Scientific Services

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 144107

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/25
Report #: R2982203
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C448074
Received: 2024/08/27, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/08/29	2024/08/29	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	3	2024/09/24	2024/09/25	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	3	2024/09/23	2024/09/24	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 144107

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/09/25
Report #: R2982203
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C448074
Received: 2024/08/27, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
25 Sep 2024 16:12:54

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NK6457	NK6458	NK6459		
Sampling Date		2024/08/19 00:00	2024/08/21 00:00	2024/08/23 00:00		
COC Number		144107	144107	144107		
	Units	ND7619-01(AQS2)	ND7631-01 (AQS4)	ND7634-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1901	0.1827	0.1909	0.0002	2561437
Weight of filter and sample	g	0.1832	0.1828	0.1928	0.0002	2561437
Total particles	g	<0.0002	<0.0002	0.0019	0.0002	2561437

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NK6457	NK6457	NK6458	NK6459		
Sampling Date		2024/08/19 00:00	2024/08/19 00:00	2024/08/21 00:00	2024/08/23 00:00		
COC Number		144107	144107	144107	144107		
	Units	ND7619-01(AQS2)	ND7619-01(AQS2) Lab-Dup	ND7631-01 (AQS4)	ND7634-01 (AQS6)	RDL	QC Batch
METALS							
Acid extractable Mercury (Hg) †	ug	<0.0025	N/A	<0.0025	<0.0025	0.0025	2571732
Total Extractable Chromium (Cr) †	ug	0.10	0.096	0.12	0.12	0.050	2571733
Total Extractable Copper (Cu) †	ug	0.061	0.053	0.040	0.031	0.030	2571733
Total Extractable Iron (Fe) †	ug	<5.0	<5.0	<5.0	45	5.0	2571733
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	0.097	<0.030	0.030	2571733
Total Extractable Manganese (Mn) †	ug	<0.050	<0.050	<0.050	6.8	0.050	2571733
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2571733
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2571733
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2571733
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2571733
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2571733
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2571733
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	<0.50	0.50	2571733
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	0.082	0.050	2571733
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2571733
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2571733

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

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GENERAL COMMENTS

CONVENTIONAL PARAMETERS (FILTER)

Particules Totales: pour NK6457. Bien que le filtre ne soit pas endommagé, la valeur calculée de “particules totals” est inférieure à l’acceptabilité négative et montrent <LDR 0.0002. Possibilité de sous-estimation des résultats.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2571732	ANF	Spiked Blank	Acid extractable Mercury (Hg)	2024/09/25		97	%
2571732	ANF	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/09/25		97	%
2571732	ANF	Method Blank	Acid extractable Mercury (Hg)	2024/09/25	<0.0025		ug
2571733	é2Z	Reagent Blank	Total Extractable Chromium (Cr)	2024/09/24	<0.050		ug
			Total Extractable Copper (Cu)	2024/09/24	<0.030		ug
			Total Extractable Iron (Fe)	2024/09/24	<5.0		ug
			Total Extractable Lead (Pb)	2024/09/24	<0.030		ug
			Total Extractable Manganese (Mn)	2024/09/24	<0.050		ug
			Total Extractable Antimony (Sb)	2024/09/24	<0.050		ug
			Total Extractable Nickel (Ni)	2024/09/24	<0.050		ug
			Total Extractable Silver (Ag)	2024/09/24	<0.010		ug
			Total Extractable Arsenic (As)	2024/09/24	<0.050		ug
			Total Extractable Thallium (Tl)	2024/09/24	<0.010		ug
			Total Extractable Vanadium (V)	2024/09/24	<0.030		ug
			Total Extractable Zinc (Zn)	2024/09/24	<0.50		ug
			Total Extractable Barium (Ba)	2024/09/24	<0.050		ug
			Total Extractable Beryllium (Be)	2024/09/24	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/09/24	<0.010		ug
2571733	é2Z	Matrix Spike [NK6457-01]	Total Extractable Chromium (Cr)	2024/09/24		103	%
			Total Extractable Copper (Cu)	2024/09/24		102	%
			Total Extractable Iron (Fe)	2024/09/24		103	%
			Total Extractable Lead (Pb)	2024/09/24		99	%
			Total Extractable Manganese (Mn)	2024/09/24		102	%
			Total Extractable Antimony (Sb)	2024/09/24		100	%
			Total Extractable Nickel (Ni)	2024/09/24		101	%
			Total Extractable Silver (Ag)	2024/09/24		101	%
			Total Extractable Arsenic (As)	2024/09/24		101	%
			Total Extractable Thallium (Tl)	2024/09/24		100	%
			Total Extractable Vanadium (V)	2024/09/24		104	%
			Total Extractable Zinc (Zn)	2024/09/24		98	%
			Total Extractable Barium (Ba)	2024/09/24		102	%
			Total Extractable Beryllium (Be)	2024/09/24		104	%
			Total Extractable Cadmium (Cd)	2024/09/24		97	%
2571733	é2Z	Matrix Spike DUP [NK6457-01]	Total Extractable Chromium (Cr)	2024/09/24		101	%
			Total Extractable Copper (Cu)	2024/09/24		102	%
			Total Extractable Iron (Fe)	2024/09/24		103	%
			Total Extractable Lead (Pb)	2024/09/24		98	%
			Total Extractable Manganese (Mn)	2024/09/24		100	%
			Total Extractable Antimony (Sb)	2024/09/24		103	%
			Total Extractable Nickel (Ni)	2024/09/24		100	%
			Total Extractable Silver (Ag)	2024/09/24		101	%
			Total Extractable Arsenic (As)	2024/09/24		100	%
			Total Extractable Thallium (Tl)	2024/09/24		100	%
			Total Extractable Vanadium (V)	2024/09/24		103	%
			Total Extractable Zinc (Zn)	2024/09/24		97	%
			Total Extractable Barium (Ba)	2024/09/24		100	%
			Total Extractable Beryllium (Be)	2024/09/24		102	%
			Total Extractable Cadmium (Cd)	2024/09/24		97	%
2571733	é2Z	Spiked Blank	Total Extractable Chromium (Cr)	2024/09/24		98	%
			Total Extractable Copper (Cu)	2024/09/24		100	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Iron (Fe)	2024/09/24		100	%
			Total Extractable Lead (Pb)	2024/09/24		95	%
			Total Extractable Manganese (Mn)	2024/09/24		99	%
			Total Extractable Antimony (Sb)	2024/09/24		97	%
			Total Extractable Nickel (Ni)	2024/09/24		97	%
			Total Extractable Silver (Ag)	2024/09/24		94	%
			Total Extractable Arsenic (As)	2024/09/24		97	%
			Total Extractable Thallium (Tl)	2024/09/24		95	%
			Total Extractable Vanadium (V)	2024/09/24		100	%
			Total Extractable Zinc (Zn)	2024/09/24		94	%
			Total Extractable Barium (Ba)	2024/09/24		99	%
			Total Extractable Beryllium (Be)	2024/09/24		99	%
			Total Extractable Cadmium (Cd)	2024/09/24		94	%
2571733	é2Z	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/09/24		97	%
			Total Extractable Copper (Cu)	2024/09/24		99	%
			Total Extractable Iron (Fe)	2024/09/24		98	%
			Total Extractable Lead (Pb)	2024/09/24		97	%
			Total Extractable Manganese (Mn)	2024/09/24		98	%
			Total Extractable Antimony (Sb)	2024/09/24		99	%
			Total Extractable Nickel (Ni)	2024/09/24		97	%
			Total Extractable Silver (Ag)	2024/09/24		95	%
			Total Extractable Arsenic (As)	2024/09/24		96	%
			Total Extractable Thallium (Tl)	2024/09/24		97	%
			Total Extractable Vanadium (V)	2024/09/24		98	%
			Total Extractable Zinc (Zn)	2024/09/24		93	%
			Total Extractable Barium (Ba)	2024/09/24		98	%
			Total Extractable Beryllium (Be)	2024/09/24		98	%
			Total Extractable Cadmium (Cd)	2024/09/24		94	%
2571733	é2Z	Method Blank	Total Extractable Chromium (Cr)	2024/09/24	<0.050		ug
			Total Extractable Copper (Cu)	2024/09/24	<0.030		ug
			Total Extractable Iron (Fe)	2024/09/24	<5.0		ug
			Total Extractable Lead (Pb)	2024/09/24	<0.030		ug
			Total Extractable Manganese (Mn)	2024/09/24	<0.050		ug
			Total Extractable Antimony (Sb)	2024/09/24	<0.050		ug
			Total Extractable Nickel (Ni)	2024/09/24	<0.050		ug
			Total Extractable Silver (Ag)	2024/09/24	<0.010		ug
			Total Extractable Arsenic (As)	2024/09/24	<0.050		ug
			Total Extractable Thallium (Tl)	2024/09/24	<0.010		ug
			Total Extractable Vanadium (V)	2024/09/24	<0.030		ug
			Total Extractable Zinc (Zn)	2024/09/24	<0.50		ug
			Total Extractable Barium (Ba)	2024/09/24	<0.050		ug
			Total Extractable Beryllium (Be)	2024/09/24	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/09/24	<0.010		ug

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C448074
Report Date: 2024/09/25

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Scientific Services

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 145579

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/18
Report #: R2989660
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C452043
Received: 2024/09/10, 09:00

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/09/14	2024/09/14	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	3	2024/10/11	2024/10/18	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	3	2024/10/09	2024/10/09	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001770
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 145579

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/18
Report #: R2989660
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C452043
Received: 2024/09/10, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
18 Oct 2024 18:56:05

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NM5596	NM5597	NM5598		
Sampling Date		2024/08/31 00:00	2024/09/02 00:00	2024/09/04 00:00		
COC Number		145579	145579	145579		
	Units	ND7627-01(AQS2)	ND7623-01 (AQS4)	ND7636-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.1972	0.1874	0.1942	0.0002	2567301
Weight of filter and sample	g	0.1980	0.1873	0.1941	0.0002	2567301
Total particles	g	0.0008	<0.0002	<0.0002	0.0002	2567301

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NM5596	NM5596	NM5597	NM5598		
Sampling Date		2024/08/31 00:00	2024/08/31 00:00	2024/09/02 00:00	2024/09/04 00:00		
COC Number		145579	145579	145579	145579		
	Units	ND7627-01(AQS2)	ND7627-01(AQS2) Lab-Dup	ND7623-01 (AQS4)	ND7636-01 (AQS6)	RDL	QC Batch
METALS							
Acid extractable Mercury (Hg) †	ug	<0.0025	N/A	<0.0025	<0.0025	0.0025	2581925
Total Extractable Chromium (Cr) †	ug	0.10	0.11	0.11	0.10	0.050	2581926
Total Extractable Copper (Cu) †	ug	<0.030	<0.030	0.049	0.22	0.030	2581926
Total Extractable Iron (Fe) †	ug	7.6	7.9	<5.0	<5.0	5.0	2581926
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2581926
Total Extractable Manganese (Mn) †	ug	0.55	0.57	<0.050	0.32	0.050	2581926
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2581926
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2581926
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2581926
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2581926
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2581926
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2581926
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	<0.50	0.50	2581926
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	<0.050	0.050	2581926
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	<0.030	0.030	2581926
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	<0.010	0.010	2581926

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2581925	éCV	Spiked Blank	Acid extractable Mercury (Hg)	2024/10/18		102	%
2581925	éCV	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/10/18		101	%
2581925	éCV	Method Blank	Acid extractable Mercury (Hg)	2024/10/18	<0.0025		ug
2581926	é2Z	Reagent Blank	Total Extractable Chromium (Cr)	2024/10/09	<0.050		ug
			Total Extractable Copper (Cu)	2024/10/09	<0.030		ug
			Total Extractable Iron (Fe)	2024/10/09	<5.0		ug
			Total Extractable Lead (Pb)	2024/10/09	<0.030		ug
			Total Extractable Manganese (Mn)	2024/10/09	<0.050		ug
			Total Extractable Antimony (Sb)	2024/10/09	<0.050		ug
			Total Extractable Nickel (Ni)	2024/10/09	<0.050		ug
			Total Extractable Silver (Ag)	2024/10/09	<0.010		ug
			Total Extractable Arsenic (As)	2024/10/09	<0.050		ug
			Total Extractable Thallium (Tl)	2024/10/09	<0.010		ug
			Total Extractable Vanadium (V)	2024/10/09	<0.030		ug
			Total Extractable Zinc (Zn)	2024/10/09	<0.50		ug
			Total Extractable Barium (Ba)	2024/10/09	<0.050		ug
			Total Extractable Beryllium (Be)	2024/10/09	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/10/09	<0.010		ug
2581926	é2Z	Matrix Spike [NM5596-01]	Total Extractable Chromium (Cr)	2024/10/09		103	%
			Total Extractable Copper (Cu)	2024/10/09		101	%
			Total Extractable Iron (Fe)	2024/10/09		106	%
			Total Extractable Lead (Pb)	2024/10/09		98	%
			Total Extractable Manganese (Mn)	2024/10/09		104	%
			Total Extractable Antimony (Sb)	2024/10/09		105	%
			Total Extractable Nickel (Ni)	2024/10/09		100	%
			Total Extractable Silver (Ag)	2024/10/09		99	%
			Total Extractable Arsenic (As)	2024/10/09		99	%
			Total Extractable Thallium (Tl)	2024/10/09		101	%
			Total Extractable Vanadium (V)	2024/10/09		103	%
			Total Extractable Zinc (Zn)	2024/10/09		96	%
			Total Extractable Barium (Ba)	2024/10/09		106	%
			Total Extractable Beryllium (Be)	2024/10/09		103	%
			Total Extractable Cadmium (Cd)	2024/10/09		99	%
2581926	é2Z	Matrix Spike DUP [NM5596-01]	Total Extractable Chromium (Cr)	2024/10/09		103	%
			Total Extractable Copper (Cu)	2024/10/09		102	%
			Total Extractable Iron (Fe)	2024/10/09		105	%
			Total Extractable Lead (Pb)	2024/10/09		98	%
			Total Extractable Manganese (Mn)	2024/10/09		105	%
			Total Extractable Antimony (Sb)	2024/10/09		108	%
			Total Extractable Nickel (Ni)	2024/10/09		101	%
			Total Extractable Silver (Ag)	2024/10/09		100	%
			Total Extractable Arsenic (As)	2024/10/09		100	%
			Total Extractable Thallium (Tl)	2024/10/09		103	%
			Total Extractable Vanadium (V)	2024/10/09		104	%
			Total Extractable Zinc (Zn)	2024/10/09		97	%
			Total Extractable Barium (Ba)	2024/10/09		106	%
			Total Extractable Beryllium (Be)	2024/10/09		104	%
			Total Extractable Cadmium (Cd)	2024/10/09		100	%
2581926	é2Z	Spiked Blank	Total Extractable Chromium (Cr)	2024/10/09		100	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Copper (Cu)	2024/10/09		101	%
			Total Extractable Iron (Fe)	2024/10/09		101	%
			Total Extractable Lead (Pb)	2024/10/09		97	%
			Total Extractable Manganese (Mn)	2024/10/09		102	%
			Total Extractable Antimony (Sb)	2024/10/09		103	%
			Total Extractable Nickel (Ni)	2024/10/09		98	%
			Total Extractable Silver (Ag)	2024/10/09		95	%
			Total Extractable Arsenic (As)	2024/10/09		97	%
			Total Extractable Thallium (Tl)	2024/10/09		99	%
			Total Extractable Vanadium (V)	2024/10/09		100	%
			Total Extractable Zinc (Zn)	2024/10/09		94	%
			Total Extractable Barium (Ba)	2024/10/09		103	%
			Total Extractable Beryllium (Be)	2024/10/09		105	%
			Total Extractable Cadmium (Cd)	2024/10/09		97	%
2581926	é2Z	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/10/09		98	%
			Total Extractable Copper (Cu)	2024/10/09		99	%
			Total Extractable Iron (Fe)	2024/10/09		99	%
			Total Extractable Lead (Pb)	2024/10/09		96	%
			Total Extractable Manganese (Mn)	2024/10/09		99	%
			Total Extractable Antimony (Sb)	2024/10/09		102	%
			Total Extractable Nickel (Ni)	2024/10/09		96	%
			Total Extractable Silver (Ag)	2024/10/09		93	%
			Total Extractable Arsenic (As)	2024/10/09		96	%
			Total Extractable Thallium (Tl)	2024/10/09		98	%
			Total Extractable Vanadium (V)	2024/10/09		97	%
			Total Extractable Zinc (Zn)	2024/10/09		92	%
			Total Extractable Barium (Ba)	2024/10/09		102	%
			Total Extractable Beryllium (Be)	2024/10/09		103	%
			Total Extractable Cadmium (Cd)	2024/10/09		97	%
2581926	é2Z	Method Blank	Total Extractable Chromium (Cr)	2024/10/09	<0.050		ug
			Total Extractable Copper (Cu)	2024/10/09	<0.030		ug
			Total Extractable Iron (Fe)	2024/10/09	<5.0		ug
			Total Extractable Lead (Pb)	2024/10/09	<0.030		ug
			Total Extractable Manganese (Mn)	2024/10/09	<0.050		ug
			Total Extractable Antimony (Sb)	2024/10/09	<0.050		ug
			Total Extractable Nickel (Ni)	2024/10/09	<0.050		ug
			Total Extractable Silver (Ag)	2024/10/09	<0.010		ug
			Total Extractable Arsenic (As)	2024/10/09	<0.050		ug
			Total Extractable Thallium (Tl)	2024/10/09	<0.010		ug
			Total Extractable Vanadium (V)	2024/10/09	<0.030		ug
			Total Extractable Zinc (Zn)	2024/10/09	<0.50		ug
			Total Extractable Barium (Ba)	2024/10/09	<0.050		ug
			Total Extractable Beryllium (Be)	2024/10/09	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/10/09	<0.010		ug

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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Bureau Veritas Job #: C452043
Report Date: 2024/10/18

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001770

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Scientific Services

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

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Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 148449

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/23
Report #: R2992076
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455191
Received: 2024/09/25, 09:45

Sample Matrix: Filter
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	3	2024/09/28	2024/09/28	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	3	2024/10/21	2024/10/23	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	3	2024/10/18	2024/10/21	CAM SOP-00447	EPA 6020B m

Remarks:

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 148449

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/23
Report #: R2992076
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455191
Received: 2024/09/25, 09:45

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AUTHORIZED REPORT
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Bureau Veritas
23 Oct 2024 18:15:56

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NO1864	NO1865	NO1866		
Sampling Date		2024/09/12 00:00	2024/09/14 00:00	2024/09/16 00:00		
COC Number		148449	148449	148449		
	Units	NG0478-01(AQS2)	NG0468-01 (AQS4)	NG0487-01 (AQS6)	RDL	QC Batch
CONVENTIONALS						
Weight of filter	g	0.2093	0.1811	0.1901	0.0002	2573217
Weight of filter and sample	g	0.2094	0.1816	0.1904	0.0002	2573217
Total particles	g	<0.0002	0.0005	0.0003	0.0002	2573217

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NO1864	NO1865	NO1866		
Sampling Date		2024/09/12 00:00	2024/09/14 00:00	2024/09/16 00:00		
COC Number		148449	148449	148449		
	Units	NG0478-01(AQS2)	NG0468-01 (AQS4)	NG0487-01 (AQS6)	RDL	QC Batch
METALS						
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	<0.0025	0.0025	2583888
Total Extractable Chromium (Cr) †	ug	0.11	0.080	0.10	0.050	2583889
Total Extractable Copper (Cu) †	ug	0.065	<0.030	<0.030	0.030	2583889
Total Extractable Iron (Fe) †	ug	<5.0	<5.0	<5.0	5.0	2583889
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	0.030	2583889
Total Extractable Manganese (Mn) †	ug	0.12	0.20	0.26	0.050	2583889
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	0.050	2583889
Total Extractable Nickel (Ni) †	ug	0.081	<0.050	<0.050	0.050	2583889
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	0.010	2583889
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	0.050	2583889
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	0.010	2583889
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	0.030	2583889
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	0.50	2583889
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	0.050	2583889
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	0.030	2583889
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	0.010	2583889

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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GENERAL COMMENTS

CONVENTIONAL PARAMETERS (FILTER)

Particules Totales : Veuillez noter que le filtre de NO1866 a été reçu endommagé. Possibilité de sous-estimation des résultats.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2583888	éCV	Spiked Blank	Acid extractable Mercury (Hg)	2024/10/23		96	%
2583888	éCV	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/10/23		96	%
2583888	éCV	Method Blank	Acid extractable Mercury (Hg)	2024/10/23	<0.0025		ug
2583889	IHP	Matrix Spike	Total Extractable Chromium (Cr)	2024/10/21		102	%
			Total Extractable Copper (Cu)	2024/10/21		104	%
			Total Extractable Iron (Fe)	2024/10/21		103	%
			Total Extractable Lead (Pb)	2024/10/21		97	%
			Total Extractable Manganese (Mn)	2024/10/21		100	%
			Total Extractable Antimony (Sb)	2024/10/21		103	%
			Total Extractable Nickel (Ni)	2024/10/21		97	%
			Total Extractable Silver (Ag)	2024/10/21		98	%
			Total Extractable Arsenic (As)	2024/10/21		100	%
			Total Extractable Thallium (Tl)	2024/10/21		100	%
			Total Extractable Vanadium (V)	2024/10/21		98	%
			Total Extractable Zinc (Zn)	2024/10/21		95	%
			Total Extractable Barium (Ba)	2024/10/21		103	%
			Total Extractable Beryllium (Be)	2024/10/21		99	%
			Total Extractable Cadmium (Cd)	2024/10/21		98	%
2583889	IHP	Matrix Spike DUP	Total Extractable Chromium (Cr)	2024/10/21		101	%
			Total Extractable Copper (Cu)	2024/10/21		100	%
			Total Extractable Iron (Fe)	2024/10/21		102	%
			Total Extractable Lead (Pb)	2024/10/21		99	%
			Total Extractable Manganese (Mn)	2024/10/21		102	%
			Total Extractable Antimony (Sb)	2024/10/21		102	%
			Total Extractable Nickel (Ni)	2024/10/21		98	%
			Total Extractable Silver (Ag)	2024/10/21		101	%
			Total Extractable Arsenic (As)	2024/10/21		103	%
			Total Extractable Thallium (Tl)	2024/10/21		102	%
			Total Extractable Vanadium (V)	2024/10/21		99	%
			Total Extractable Zinc (Zn)	2024/10/21		99	%
			Total Extractable Barium (Ba)	2024/10/21		104	%
			Total Extractable Beryllium (Be)	2024/10/21		102	%
			Total Extractable Cadmium (Cd)	2024/10/21		98	%
2583889	IHP	Spiked Blank	Total Extractable Chromium (Cr)	2024/10/21		102	%
			Total Extractable Copper (Cu)	2024/10/21		102	%
			Total Extractable Iron (Fe)	2024/10/21		102	%
			Total Extractable Lead (Pb)	2024/10/21		97	%
			Total Extractable Manganese (Mn)	2024/10/21		99	%
			Total Extractable Antimony (Sb)	2024/10/21		100	%
			Total Extractable Nickel (Ni)	2024/10/21		97	%
			Total Extractable Silver (Ag)	2024/10/21		96	%
			Total Extractable Arsenic (As)	2024/10/21		100	%
			Total Extractable Thallium (Tl)	2024/10/21		99	%
			Total Extractable Vanadium (V)	2024/10/21		96	%
			Total Extractable Zinc (Zn)	2024/10/21		95	%
			Total Extractable Barium (Ba)	2024/10/21		100	%
			Total Extractable Beryllium (Be)	2024/10/21		98	%
			Total Extractable Cadmium (Cd)	2024/10/21		97	%
2583889	IHP	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/10/21		98	%
			Total Extractable Copper (Cu)	2024/10/21		103	%
			Total Extractable Iron (Fe)	2024/10/21		103	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Lead (Pb)	2024/10/21		96	%
			Total Extractable Manganese (Mn)	2024/10/21		100	%
			Total Extractable Antimony (Sb)	2024/10/21		100	%
			Total Extractable Nickel (Ni)	2024/10/21		98	%
			Total Extractable Silver (Ag)	2024/10/21		96	%
			Total Extractable Arsenic (As)	2024/10/21		99	%
			Total Extractable Thallium (Tl)	2024/10/21		100	%
			Total Extractable Vanadium (V)	2024/10/21		96	%
			Total Extractable Zinc (Zn)	2024/10/21		95	%
			Total Extractable Barium (Ba)	2024/10/21		100	%
			Total Extractable Beryllium (Be)	2024/10/21		101	%
			Total Extractable Cadmium (Cd)	2024/10/21		97	%
2583889	IHP	Method Blank	Total Extractable Chromium (Cr)	2024/10/21	<0.050		ug
			Total Extractable Copper (Cu)	2024/10/21	<0.030		ug
			Total Extractable Iron (Fe)	2024/10/21	<5.0		ug
			Total Extractable Lead (Pb)	2024/10/21	<0.030		ug
			Total Extractable Manganese (Mn)	2024/10/21	<0.050		ug
			Total Extractable Antimony (Sb)	2024/10/21	<0.050		ug
			Total Extractable Nickel (Ni)	2024/10/21	<0.050		ug
			Total Extractable Silver (Ag)	2024/10/21	<0.010		ug
			Total Extractable Arsenic (As)	2024/10/21	<0.050		ug
			Total Extractable Thallium (Tl)	2024/10/21	<0.010		ug
			Total Extractable Vanadium (V)	2024/10/21	<0.030		ug
			Total Extractable Zinc (Zn)	2024/10/21	<0.50		ug
			Total Extractable Barium (Ba)	2024/10/21	<0.050		ug
			Total Extractable Beryllium (Be)	2024/10/21	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/10/21	<0.010		ug

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C455191
Report Date: 2024/10/23

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

CHIMISTE Shu Yang 2008-014 QUÉBEC

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 149142

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/23
Report #: R2992078
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C457612
Received: 2024/10/02, 09:00

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	2	2024/10/08	2024/10/08	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	2	2024/10/21	2024/10/23	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	2	2024/10/18	2024/10/21	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 149142

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/10/23
Report #: R2992078
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C457612
Received: 2024/10/02, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
23 Oct 2024 18:17:12

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NP5135	NP5136		
Sampling Date		2024/09/24 00:00	2024/09/26 00:00		
COC Number		149142	149142		
	Units	NG461-01(AQS2)	NG0470-01(AQS6)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.1922	0.1943	0.0002	2577136
Weight of filter and sample	g	0.1931	0.1945	0.0002	2577136
Total particles	g	0.0009	0.0002	0.0002	2577136

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NP5135	NP5136		
Sampling Date		2024/09/24 00:00	2024/09/26 00:00		
COC Number		149142	149142		
	Units	NG461-01(AQS2)	NG0470-01(AQS6)	RDL	QC Batch
METALS					
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	0.0025	2583888
Total Extractable Chromium (Cr) †	ug	0.12	0.092	0.050	2583889
Total Extractable Copper (Cu) †	ug	<0.030	0.14	0.030	2583889
Total Extractable Iron (Fe) †	ug	54	9.0	5.0	2583889
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	0.030	2583889
Total Extractable Manganese (Mn) †	ug	3.3	1.1	0.050	2583889
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	0.050	2583889
Total Extractable Nickel (Ni) †	ug	<0.050	<0.050	0.050	2583889
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	0.010	2583889
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	0.050	2583889
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	0.010	2583889
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	0.030	2583889
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	0.50	2583889
Total Extractable Barium (Ba) †	ug	0.064	<0.050	0.050	2583889
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	0.030	2583889
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	0.010	2583889

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2583888	éCV	Spiked Blank	Acid extractable Mercury (Hg)	2024/10/23		96	%
2583888	éCV	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/10/23		96	%
2583888	éCV	Method Blank	Acid extractable Mercury (Hg)	2024/10/23	<0.0025		ug
2583889	IHP	Matrix Spike	Total Extractable Chromium (Cr)	2024/10/21		102	%
			Total Extractable Copper (Cu)	2024/10/21		104	%
			Total Extractable Iron (Fe)	2024/10/21		103	%
			Total Extractable Lead (Pb)	2024/10/21		97	%
			Total Extractable Manganese (Mn)	2024/10/21		100	%
			Total Extractable Antimony (Sb)	2024/10/21		103	%
			Total Extractable Nickel (Ni)	2024/10/21		97	%
			Total Extractable Silver (Ag)	2024/10/21		98	%
			Total Extractable Arsenic (As)	2024/10/21		100	%
			Total Extractable Thallium (Tl)	2024/10/21		100	%
			Total Extractable Vanadium (V)	2024/10/21		98	%
			Total Extractable Zinc (Zn)	2024/10/21		95	%
			Total Extractable Barium (Ba)	2024/10/21		103	%
			Total Extractable Beryllium (Be)	2024/10/21		99	%
			Total Extractable Cadmium (Cd)	2024/10/21		98	%
2583889	IHP	Matrix Spike DUP	Total Extractable Chromium (Cr)	2024/10/21		101	%
			Total Extractable Copper (Cu)	2024/10/21		100	%
			Total Extractable Iron (Fe)	2024/10/21		102	%
			Total Extractable Lead (Pb)	2024/10/21		99	%
			Total Extractable Manganese (Mn)	2024/10/21		102	%
			Total Extractable Antimony (Sb)	2024/10/21		102	%
			Total Extractable Nickel (Ni)	2024/10/21		98	%
			Total Extractable Silver (Ag)	2024/10/21		101	%
			Total Extractable Arsenic (As)	2024/10/21		103	%
			Total Extractable Thallium (Tl)	2024/10/21		102	%
			Total Extractable Vanadium (V)	2024/10/21		99	%
			Total Extractable Zinc (Zn)	2024/10/21		99	%
			Total Extractable Barium (Ba)	2024/10/21		104	%
			Total Extractable Beryllium (Be)	2024/10/21		102	%
			Total Extractable Cadmium (Cd)	2024/10/21		98	%
2583889	IHP	Spiked Blank	Total Extractable Chromium (Cr)	2024/10/21		102	%
			Total Extractable Copper (Cu)	2024/10/21		102	%
			Total Extractable Iron (Fe)	2024/10/21		102	%
			Total Extractable Lead (Pb)	2024/10/21		97	%
			Total Extractable Manganese (Mn)	2024/10/21		99	%
			Total Extractable Antimony (Sb)	2024/10/21		100	%
			Total Extractable Nickel (Ni)	2024/10/21		97	%
			Total Extractable Silver (Ag)	2024/10/21		96	%
			Total Extractable Arsenic (As)	2024/10/21		100	%
			Total Extractable Thallium (Tl)	2024/10/21		99	%
			Total Extractable Vanadium (V)	2024/10/21		96	%
			Total Extractable Zinc (Zn)	2024/10/21		95	%
			Total Extractable Barium (Ba)	2024/10/21		100	%
			Total Extractable Beryllium (Be)	2024/10/21		98	%
			Total Extractable Cadmium (Cd)	2024/10/21		97	%
2583889	IHP	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/10/21		98	%
			Total Extractable Copper (Cu)	2024/10/21		103	%
			Total Extractable Iron (Fe)	2024/10/21		103	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Lead (Pb)	2024/10/21		96	%
			Total Extractable Manganese (Mn)	2024/10/21		100	%
			Total Extractable Antimony (Sb)	2024/10/21		100	%
			Total Extractable Nickel (Ni)	2024/10/21		98	%
			Total Extractable Silver (Ag)	2024/10/21		96	%
			Total Extractable Arsenic (As)	2024/10/21		99	%
			Total Extractable Thallium (Tl)	2024/10/21		100	%
			Total Extractable Vanadium (V)	2024/10/21		96	%
			Total Extractable Zinc (Zn)	2024/10/21		95	%
			Total Extractable Barium (Ba)	2024/10/21		100	%
			Total Extractable Beryllium (Be)	2024/10/21		101	%
			Total Extractable Cadmium (Cd)	2024/10/21		97	%
2583889	IHP	Method Blank	Total Extractable Chromium (Cr)	2024/10/21	<0.050		ug
			Total Extractable Copper (Cu)	2024/10/21	<0.030		ug
			Total Extractable Iron (Fe)	2024/10/21	<5.0		ug
			Total Extractable Lead (Pb)	2024/10/21	<0.030		ug
			Total Extractable Manganese (Mn)	2024/10/21	<0.050		ug
			Total Extractable Antimony (Sb)	2024/10/21	<0.050		ug
			Total Extractable Nickel (Ni)	2024/10/21	<0.050		ug
			Total Extractable Silver (Ag)	2024/10/21	<0.010		ug
			Total Extractable Arsenic (As)	2024/10/21	<0.050		ug
			Total Extractable Thallium (Tl)	2024/10/21	<0.010		ug
			Total Extractable Vanadium (V)	2024/10/21	<0.030		ug
			Total Extractable Zinc (Zn)	2024/10/21	<0.50		ug
			Total Extractable Barium (Ba)	2024/10/21	<0.050		ug
			Total Extractable Beryllium (Be)	2024/10/21	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/10/21	<0.010		ug

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C457612
Report Date: 2024/10/23

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Louise Harding, Scientific Specialist

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 150600

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/08
Report #: R2997279
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C460995
Received: 2024/10/15, 13:30

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	2	2024/10/22	2024/10/22	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	2	2024/11/05	2024/11/07	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	2	2024/11/01	2024/11/06	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 150600

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/08
Report #: R2997279
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C460995
Received: 2024/10/15, 13:30

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
08 Nov 2024 18:12:32

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NR3241	NR3242		
Sampling Date		2024/10/06 00:00	2024/10/10 00:00		
COC Number		150600	150600		
	Units	NG0471-01(AQS2)	NG0467-01(AQS6)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.1930	0.1996	0.0002	2582939
Weight of filter and sample	g	0.1930	0.1999	0.0002	2582939
Total particles	g	<0.0002	0.0003	0.0002	2582939

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001868

SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NR3241	NR3242	NR3242		
Sampling Date		2024/10/06 00:00	2024/10/10 00:00	2024/10/10 00:00		
COC Number		150600	150600	150600		
	Units	NG0471-01(AQS2)	NG0467-01(AQS6)	NG0467-01(AQS6) Lab-Dup	RDL	QC Batch
METALS						
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	N/A	0.0025	2591215
Total Extractable Chromium (Cr) †	ug	0.082	0.10	0.11	0.050	2591216
Total Extractable Copper (Cu) †	ug	0.036	0.25	0.24	0.030	2591216
Total Extractable Iron (Fe) †	ug	<5.0	<5.0	<5.0	5.0	2591216
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	<0.030	0.030	2591216
Total Extractable Manganese (Mn) †	ug	0.42	0.31	0.30	0.050	2591216
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	<0.050	0.050	2591216
Total Extractable Nickel (Ni) †	ug	<0.050	0.34	0.34	0.050	2591216
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	<0.010	0.010	2591216
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	<0.050	0.050	2591216
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	<0.010	0.010	2591216
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	<0.030	0.030	2591216
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	<0.50	0.50	2591216
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	<0.050	0.050	2591216
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	<0.030	0.030	2591216
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	<0.010	0.010	2591216

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2591215	MPJ	Spiked Blank	Acid extractable Mercury (Hg)	2024/11/07		101	%
2591215	MPJ	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/11/07		99	%
2591215	MPJ	Method Blank	Acid extractable Mercury (Hg)	2024/11/07	<0.0025		ug
2591216	N_R	Reagent Blank	Total Extractable Chromium (Cr)	2024/11/06	0.19, RDL=0.050		ug
			Total Extractable Copper (Cu)	2024/11/06	<0.030		ug
			Total Extractable Iron (Fe)	2024/11/06	<5.0		ug
			Total Extractable Lead (Pb)	2024/11/06	<0.030		ug
			Total Extractable Manganese (Mn)	2024/11/06	<0.050		ug
			Total Extractable Antimony (Sb)	2024/11/06	<0.050		ug
			Total Extractable Nickel (Ni)	2024/11/06	<0.050		ug
			Total Extractable Silver (Ag)	2024/11/06	<0.010		ug
			Total Extractable Arsenic (As)	2024/11/06	<0.050		ug
			Total Extractable Thallium (Tl)	2024/11/06	<0.010		ug
			Total Extractable Vanadium (V)	2024/11/06	<0.030		ug
			Total Extractable Zinc (Zn)	2024/11/06	<0.50		ug
			Total Extractable Barium (Ba)	2024/11/06	<0.050		ug
			Total Extractable Beryllium (Be)	2024/11/06	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/11/06	<0.010		ug
2591216	N_R	Matrix Spike [NR3242-01]	Total Extractable Chromium (Cr)	2024/11/06		99	%
			Total Extractable Copper (Cu)	2024/11/06		102	%
			Total Extractable Iron (Fe)	2024/11/06		102	%
			Total Extractable Lead (Pb)	2024/11/06		99	%
			Total Extractable Manganese (Mn)	2024/11/06		99	%
			Total Extractable Antimony (Sb)	2024/11/06		102	%
			Total Extractable Nickel (Ni)	2024/11/06		98	%
			Total Extractable Silver (Ag)	2024/11/06		101	%
			Total Extractable Arsenic (As)	2024/11/06		100	%
			Total Extractable Thallium (Tl)	2024/11/06		99	%
			Total Extractable Vanadium (V)	2024/11/06		100	%
			Total Extractable Zinc (Zn)	2024/11/06		96	%
			Total Extractable Barium (Ba)	2024/11/06		101	%
			Total Extractable Beryllium (Be)	2024/11/06		102	%
			Total Extractable Cadmium (Cd)	2024/11/06		98	%
2591216	N_R	Matrix Spike DUP [NR3242-01]	Total Extractable Chromium (Cr)	2024/11/06		100	%
			Total Extractable Copper (Cu)	2024/11/06		101	%
			Total Extractable Iron (Fe)	2024/11/06		103	%
			Total Extractable Lead (Pb)	2024/11/06		99	%
			Total Extractable Manganese (Mn)	2024/11/06		101	%
			Total Extractable Antimony (Sb)	2024/11/06		102	%
			Total Extractable Nickel (Ni)	2024/11/06		100	%
			Total Extractable Silver (Ag)	2024/11/06		101	%
			Total Extractable Arsenic (As)	2024/11/06		101	%
			Total Extractable Thallium (Tl)	2024/11/06		98	%
			Total Extractable Vanadium (V)	2024/11/06		102	%
			Total Extractable Zinc (Zn)	2024/11/06		97	%
			Total Extractable Barium (Ba)	2024/11/06		102	%
			Total Extractable Beryllium (Be)	2024/11/06		101	%
			Total Extractable Cadmium (Cd)	2024/11/06		97	%
2591216	N_R	Spiked Blank	Total Extractable Chromium (Cr)	2024/11/06		96	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Copper (Cu)	2024/11/06		101	%
			Total Extractable Iron (Fe)	2024/11/06		98	%
			Total Extractable Lead (Pb)	2024/11/06		96	%
			Total Extractable Manganese (Mn)	2024/11/06		97	%
			Total Extractable Antimony (Sb)	2024/11/06		99	%
			Total Extractable Nickel (Ni)	2024/11/06		96	%
			Total Extractable Silver (Ag)	2024/11/06		95	%
			Total Extractable Arsenic (As)	2024/11/06		96	%
			Total Extractable Thallium (Tl)	2024/11/06		94	%
			Total Extractable Vanadium (V)	2024/11/06		97	%
			Total Extractable Zinc (Zn)	2024/11/06		93	%
			Total Extractable Barium (Ba)	2024/11/06		100	%
			Total Extractable Beryllium (Be)	2024/11/06		99	%
			Total Extractable Cadmium (Cd)	2024/11/06		95	%
2591216	N_R	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/11/06		99	%
			Total Extractable Copper (Cu)	2024/11/06		104	%
			Total Extractable Iron (Fe)	2024/11/06		101	%
			Total Extractable Lead (Pb)	2024/11/06		100	%
			Total Extractable Manganese (Mn)	2024/11/06		99	%
			Total Extractable Antimony (Sb)	2024/11/06		102	%
			Total Extractable Nickel (Ni)	2024/11/06		99	%
			Total Extractable Silver (Ag)	2024/11/06		98	%
			Total Extractable Arsenic (As)	2024/11/06		99	%
			Total Extractable Thallium (Tl)	2024/11/06		97	%
			Total Extractable Vanadium (V)	2024/11/06		100	%
			Total Extractable Zinc (Zn)	2024/11/06		96	%
			Total Extractable Barium (Ba)	2024/11/06		103	%
			Total Extractable Beryllium (Be)	2024/11/06		100	%
			Total Extractable Cadmium (Cd)	2024/11/06		98	%
2591216	N_R	Method Blank	Total Extractable Chromium (Cr)	2024/11/06	<0.050		ug
			Total Extractable Copper (Cu)	2024/11/06	<0.030		ug
			Total Extractable Iron (Fe)	2024/11/06	<5.0		ug
			Total Extractable Lead (Pb)	2024/11/06	<0.030		ug
			Total Extractable Manganese (Mn)	2024/11/06	<0.050		ug
			Total Extractable Antimony (Sb)	2024/11/06	<0.050		ug
			Total Extractable Nickel (Ni)	2024/11/06	<0.050		ug
			Total Extractable Silver (Ag)	2024/11/06	<0.010		ug
			Total Extractable Arsenic (As)	2024/11/06	<0.050		ug
			Total Extractable Thallium (Tl)	2024/11/06	<0.010		ug
			Total Extractable Vanadium (V)	2024/11/06	<0.030		ug
			Total Extractable Zinc (Zn)	2024/11/06	<0.50		ug
			Total Extractable Barium (Ba)	2024/11/06	<0.050		ug
			Total Extractable Beryllium (Be)	2024/11/06	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/11/06	<0.010		ug

RDL = Reportable Detection Limit

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C460995
Report Date: 2024/11/08

TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001868

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

CHIMISTE Shu Yang 2008-014 QUÉBEC

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 153312

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/21
Report #: R3001806
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463683
Received: 2024/10/30, 09:00

Sample Matrix: Filter
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Particulate	2	2024/11/01	2024/11/01	STL SOP-00045	MA100– Part 1.0 R4 m
Mercury (CVAA) in filters (1)	2	2024/11/20	2024/11/21	BRL SOP-00104	EPA 7470A m
Total metals on small filter (6020Bmod) (1)	2	2024/11/15	2024/11/18	CAM SOP-00447	EPA 6020B m

Remarks:

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd. , Mississauga, ON, L5N 2L8

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001868
Your Project #: TPM
Site Location: DSO3-4
Your C.O.C. #: 153312

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2024/11/21
Report #: R3001806
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463683
Received: 2024/10/30, 09:00

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
21 Nov 2024 17:00:57

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001868

CONVENTIONAL PARAMETERS (FILTER)

Bureau Veritas ID		NS8020	NS8021		
Sampling Date		2024/10/22 00:00	2024/10/18 00:00		
COC Number		153312	153312		
	Units	NG0466-01(AQS6)	NG0490-01(AQS2)	RDL	QC Batch
CONVENTIONALS					
Weight of filter	g	0.2106	0.1966	0.0002	2588066
Weight of filter and sample	g	0.2109	0.1968	0.0002	2588066
Total particles	g	0.0003	0.0002	0.0002	2588066

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TATA STEEL MINERALS CANADA
Client Project #: TPM
Site Location: DSO3-4
Your P.O. #: 3000001868

SUBCONTRACTED ANALYSIS (FILTER)

Bureau Veritas ID		NS8020	NS8021		
Sampling Date		2024/10/22 00:00	2024/10/18 00:00		
COC Number		153312	153312		
	Units	NG0466-01(AQS6)	NG0490-01(AQS2)	RDL	QC Batch
METALS					
Acid extractable Mercury (Hg) †	ug	<0.0025	<0.0025	0.0025	2596394
Total Extractable Chromium (Cr) †	ug	0.13	0.098	0.050	2596395
Total Extractable Copper (Cu) †	ug	0.28	<0.030	0.030	2596395
Total Extractable Iron (Fe) †	ug	9.3	<5.0	5.0	2596395
Total Extractable Lead (Pb) †	ug	<0.030	<0.030	0.030	2596395
Total Extractable Manganese (Mn) †	ug	1.1	0.13	0.050	2596395
Total Extractable Antimony (Sb) †	ug	<0.050	<0.050	0.050	2596395
Total Extractable Nickel (Ni) †	ug	0.23	<0.050	0.050	2596395
Total Extractable Silver (Ag) †	ug	<0.010	<0.010	0.010	2596395
Total Extractable Arsenic (As) †	ug	<0.050	<0.050	0.050	2596395
Total Extractable Thallium (Tl) †	ug	<0.010	<0.010	0.010	2596395
Total Extractable Vanadium (V) †	ug	<0.030	<0.030	0.030	2596395
Total Extractable Zinc (Zn) †	ug	<0.50	<0.50	0.50	2596395
Total Extractable Barium (Ba) †	ug	<0.050	<0.050	0.050	2596395
Total Extractable Beryllium (Be) †	ug	<0.030	<0.030	0.030	2596395
Total Extractable Cadmium (Cd) †	ug	<0.010	<0.010	0.010	2596395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2596394	JGC	Spiked Blank	Acid extractable Mercury (Hg)	2024/11/21		99	%
2596394	JGC	Spiked Blank DUP	Acid extractable Mercury (Hg)	2024/11/21		99	%
2596394	JGC	Method Blank	Acid extractable Mercury (Hg)	2024/11/21	<0.0025		ug
2596395	N_R	Reagent Blank	Total Extractable Chromium (Cr)	2024/11/18	0.084, RDL=0.050		ug
			Total Extractable Copper (Cu)	2024/11/18	<0.030		ug
			Total Extractable Iron (Fe)	2024/11/18	<5.0		ug
			Total Extractable Lead (Pb)	2024/11/18	<0.030		ug
			Total Extractable Manganese (Mn)	2024/11/18	<0.050		ug
			Total Extractable Antimony (Sb)	2024/11/18	<0.050		ug
			Total Extractable Nickel (Ni)	2024/11/18	<0.050		ug
			Total Extractable Silver (Ag)	2024/11/18	<0.010		ug
			Total Extractable Arsenic (As)	2024/11/18	<0.050		ug
			Total Extractable Thallium (Tl)	2024/11/18	<0.010		ug
			Total Extractable Vanadium (V)	2024/11/18	<0.030		ug
			Total Extractable Zinc (Zn)	2024/11/18	<0.50		ug
			Total Extractable Barium (Ba)	2024/11/18	<0.050		ug
			Total Extractable Beryllium (Be)	2024/11/18	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/11/18	<0.010		ug
2596395	N_R	Matrix Spike	Total Extractable Chromium (Cr)	2024/11/18		99	%
			Total Extractable Copper (Cu)	2024/11/18		105	%
			Total Extractable Iron (Fe)	2024/11/18		100	%
			Total Extractable Lead (Pb)	2024/11/18		100	%
			Total Extractable Manganese (Mn)	2024/11/18		100	%
			Total Extractable Antimony (Sb)	2024/11/18		102	%
			Total Extractable Nickel (Ni)	2024/11/18		97	%
			Total Extractable Silver (Ag)	2024/11/18		101	%
			Total Extractable Arsenic (As)	2024/11/18		96	%
			Total Extractable Thallium (Tl)	2024/11/18		102	%
			Total Extractable Vanadium (V)	2024/11/18		99	%
			Total Extractable Zinc (Zn)	2024/11/18		94	%
			Total Extractable Barium (Ba)	2024/11/18		102	%
			Total Extractable Beryllium (Be)	2024/11/18		102	%
			Total Extractable Cadmium (Cd)	2024/11/18		97	%
2596395	N_R	Matrix Spike DUP	Total Extractable Chromium (Cr)	2024/11/18		102	%
			Total Extractable Copper (Cu)	2024/11/18		104	%
			Total Extractable Iron (Fe)	2024/11/18		102	%
			Total Extractable Lead (Pb)	2024/11/18		102	%
			Total Extractable Manganese (Mn)	2024/11/18		103	%
			Total Extractable Antimony (Sb)	2024/11/18		103	%
			Total Extractable Nickel (Ni)	2024/11/18		100	%
			Total Extractable Silver (Ag)	2024/11/18		99	%
			Total Extractable Arsenic (As)	2024/11/18		98	%
			Total Extractable Thallium (Tl)	2024/11/18		102	%
			Total Extractable Vanadium (V)	2024/11/18		102	%
			Total Extractable Zinc (Zn)	2024/11/18		97	%
			Total Extractable Barium (Ba)	2024/11/18		102	%
			Total Extractable Beryllium (Be)	2024/11/18		105	%
			Total Extractable Cadmium (Cd)	2024/11/18		98	%
2596395	N_R	Spiked Blank	Total Extractable Chromium (Cr)	2024/11/18		99	%
			Total Extractable Copper (Cu)	2024/11/18		107	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Iron (Fe)	2024/11/18		101	%
			Total Extractable Lead (Pb)	2024/11/18		98	%
			Total Extractable Manganese (Mn)	2024/11/18		102	%
			Total Extractable Antimony (Sb)	2024/11/18		101	%
			Total Extractable Nickel (Ni)	2024/11/18		99	%
			Total Extractable Silver (Ag)	2024/11/18		97	%
			Total Extractable Arsenic (As)	2024/11/18		96	%
			Total Extractable Thallium (Tl)	2024/11/18		97	%
			Total Extractable Vanadium (V)	2024/11/18		100	%
			Total Extractable Zinc (Zn)	2024/11/18		94	%
			Total Extractable Barium (Ba)	2024/11/18		100	%
			Total Extractable Beryllium (Be)	2024/11/18		99	%
			Total Extractable Cadmium (Cd)	2024/11/18		96	%
2596395	N_R	Spiked Blank DUP	Total Extractable Chromium (Cr)	2024/11/18		99	%
			Total Extractable Copper (Cu)	2024/11/18		106	%
			Total Extractable Iron (Fe)	2024/11/18		102	%
			Total Extractable Lead (Pb)	2024/11/18		101	%
			Total Extractable Manganese (Mn)	2024/11/18		102	%
			Total Extractable Antimony (Sb)	2024/11/18		102	%
			Total Extractable Nickel (Ni)	2024/11/18		100	%
			Total Extractable Silver (Ag)	2024/11/18		96	%
			Total Extractable Arsenic (As)	2024/11/18		97	%
			Total Extractable Thallium (Tl)	2024/11/18		102	%
			Total Extractable Vanadium (V)	2024/11/18		100	%
			Total Extractable Zinc (Zn)	2024/11/18		94	%
			Total Extractable Barium (Ba)	2024/11/18		101	%
			Total Extractable Beryllium (Be)	2024/11/18		102	%
			Total Extractable Cadmium (Cd)	2024/11/18		97	%
2596395	N_R	Method Blank	Total Extractable Chromium (Cr)	2024/11/18	<0.050		ug
			Total Extractable Copper (Cu)	2024/11/18	<0.030		ug
			Total Extractable Iron (Fe)	2024/11/18	<5.0		ug
			Total Extractable Lead (Pb)	2024/11/18	<0.030		ug
			Total Extractable Manganese (Mn)	2024/11/18	<0.050		ug
			Total Extractable Antimony (Sb)	2024/11/18	<0.050		ug
			Total Extractable Nickel (Ni)	2024/11/18	<0.050		ug
			Total Extractable Silver (Ag)	2024/11/18	<0.010		ug
			Total Extractable Arsenic (As)	2024/11/18	<0.050		ug
			Total Extractable Thallium (Tl)	2024/11/18	<0.010		ug
			Total Extractable Vanadium (V)	2024/11/18	<0.030		ug
			Total Extractable Zinc (Zn)	2024/11/18	<0.50		ug
			Total Extractable Barium (Ba)	2024/11/18	<0.050		ug
			Total Extractable Beryllium (Be)	2024/11/18	<0.030		ug
			Total Extractable Cadmium (Cd)	2024/11/18	<0.010		ug

RDL = Reportable Detection Limit

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

CHIMISTE Shu Yang 2008-014 QUÉBEC

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Appendix IX. Certificates of analyses – Waste rock

Your P.O. #: 3000001617
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 119612

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015673
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C407950
Received: 2024/02/22, 09:00

Sample Matrix: Soil
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	4	N/A	N/A		
Fluoride (free) in soils	4	2024/02/27	2024/03/01	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	4	N/A	2024/03/01	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	4	N/A	2024/03/02	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	4	N/A	2024/03/06	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	4	2024/02/28	2024/03/06	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	4	2024/02/29	2024/03/01	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	4	2024/02/26	2024/02/28	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	4	2024/02/28	2024/02/29	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	4	2024/03/01	2024/03/04	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	4	2024/03/06	2024/03/06	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Nitrates (NO3-),Nitrites (NO2-) leached	4	N/A	2024/02/28	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	4	N/A	2024/03/01	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	4	N/A	2024/03/06	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	4	2024/02/27	2024/02/27	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	4	N/A	2024/02/29	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	4	2024/02/26	2024/02/27	STL SOP-00024	MA100-Lixcom1.1 R1 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the

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Your P.O. #: 3000001617
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 119612

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015673
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C407950
Received: 2024/02/22, 09:00
customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
24 Jan 2025 14:26:53

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Job #: C407950
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

TOTAL EXTRACTABLE METALS (SOIL)

Bureau Veritas ID		MS5890	MS5891		MS5892	MS5893		
Sampling Date		2024/02/17	2024/02/17		2024/02/19	2024/02/19		
COC Number		119612	119612		119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	RDL	TSMC-103997-GD	TSMC-103998-GD	RDL	QC Batch
% MOISTURE	%	18	15	N/A	11	10	N/A	N/A
METALS								
Total Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	<0.50	<0.50	0.50	2496688
Total Extractable Arsenic (As)	mg/kg	5.0	3.1	2.0	7.5	5.5	2.0	2496688
Total Extractable Barium (Ba)	mg/kg	8.2	9.4	4.0	110	40	4.0	2496688
Total Extractable Boron (B)	mg/kg	8.8	11	2.0	2.5	<2.0	2.0	2496688
Total Extractable Cadmium (Cd)	mg/kg	<0.10	<0.10	0.10	0.23	0.18	0.10	2496688
Total Extractable Chromium (Cr)	mg/kg	12	15	1.0	34	29	1.0	2496688
Total Extractable Copper (Cu)	mg/kg	2.4	1.3	1.0	21	16	1.0	2496688
Total Extractable Cobalt (Co)	mg/kg	3.2	1.9	1.0	10	7.2	1.0	2496688
Total Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	<1.0	<1.0	1.0	2496688
Total Extractable Iron (Fe) †	mg/kg	170000	210000	100	92000	89000	10	2496688
Total Extractable Manganese (Mn)	mg/kg	290	170	2.0	2800	1400	2.0	2496688
Total Extractable Molybdenum (Mo)	mg/kg	0.78	0.63	0.50	1.4	0.83	0.50	2496688
Total Extractable Nickel (Ni)	mg/kg	4.0	4.1	0.50	21	16	0.50	2496688
Total Extractable Mercury (Hg)	mg/kg	0.057	0.051	0.010	0.068	0.063	0.010	2496688
Total Extractable Lead (Pb)	mg/kg	8.7	8.7	1.0	9.8	8.5	1.0	2496688
Total Extractable Selenium (Se)	mg/kg	<0.50	<0.50	0.50	<0.50	<0.50	0.50	2496688
Total Extractable Uranium (U) †	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	2.0	2496688
Total Extractable Zinc (Zn)	mg/kg	6.1	5.2	5.0	50	39	5.0	2496688

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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Bureau Veritas Job #: C407950
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MS5894	MS5895	MS5896	MS5897		
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19		
COC Number		119612	119612	119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	RDL	QC Batch
METALS							
Leached Silver (Ag) †	ug/L	<0.30	<0.30	<0.30	<0.30	0.30	2497192
Leached Arsenic (As)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	2497192
Leached Barium (Ba)	ug/L	45	160	46	46	5.0	2497192
Leached Boron (B)	ug/L	<50	<50	<50	<50	50	2497192
Leached Cadmium (Cd)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2497192
Leached Chromium (Cr)	ug/L	<7.0	<7.0	<7.0	<7.0	7.0	2497192
Leached Cobalt (Co)	ug/L	<10	<10	11	<10	10	2497192
Leached Copper (Cu)	ug/L	<6.5 (1)	<6.5 (1)	<6.5 (1)	<6.5 (1)	6.5	2497192
Leached Tin (Sn) †	ug/L	<50	<50	<50	<50	50	2497192
Leached Iron (Fe)	ug/L	<100	<100	<100	<100	100	2497192
Leached Manganese (Mn)	ug/L	1600	570	5400	4000	3.0	2497192
Leached Mercury (Hg)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	2497192
Leached Molybdenum (Mo)	ug/L	<10	<10	<10	<10	10	2497192
Leached Nickel (Ni)	ug/L	<6.0	<6.0	26	24	6.0	2497192
Leached Lead (Pb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2497192
Leached Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2497192
Leached Uranium (U)	ug/L	0.76	0.88	2.3	1.5	0.60	2497192
Leached Zinc (Zn)	ug/L	<5.0	<5.0	16	15	5.0	2497192

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) The detection limit was raised due to instrumentation.

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Bureau Veritas Job #: C407950
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MS5898	MS5899	MS5900	MS5901		
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19		
COC Number		119612	119612	119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	RDL	QC Batch
METALS							
Leached Silver (Ag) †	ug/L	<0.30	<0.30	<0.30	<0.30	0.30	2501091
Leached Arsenic (As)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	2501091
Leached Barium (Ba)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	2501091
Leached Boron (B)	ug/L	<50	<50	<50	<50	50	2501091
Leached Cadmium (Cd)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2501091
Leached Chromium (Cr)	ug/L	<7.0	<7.0	<7.0	<7.0	7.0	2501091
Leached Cobalt (Co)	ug/L	<10	<10	<10	<10	10	2501091
Leached Copper (Cu)	ug/L	<3.0	<3.0	<3.0	<3.0	3.0	2501091
Leached Tin (Sn) †	ug/L	<50	<50	<50	<50	50	2501091
Leached Iron (Fe)	ug/L	<100	<100	<100	<100	100	2501091
Leached Manganese (Mn)	ug/L	10	5.5	<3.0	<3.0	3.0	2501091
Leached Mercury (Hg)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	2501091
Leached Molybdenum (Mo)	ug/L	<10	<10	<10	<10	10	2501091
Leached Nickel (Ni)	ug/L	<6.0	<6.0	<6.0	<6.0	6.0	2501091
Leached Lead (Pb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2501091
Leached Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2501091
Leached Uranium (U)	ug/L	<0.60	<0.60	<0.60	<0.60	0.60	2501091
Leached Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	2501091

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MS5918	MS5920	MS5921	MS5922		
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19		
COC Number		119612	119612	119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	RDL	QC Batch
METALS							
Leached Silver (Ag) †	ug/L	<0.30	<0.30	<0.30	<0.30	0.30	2502066
Leached Arsenic (As)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	2502066
Leached Barium (Ba)	ug/L	<5.0	6.6	<5.0	<5.0	5.0	2502066
Leached Boron (B)	ug/L	<50	<50	<50	<50	50	2502066
Leached Cadmium (Cd)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2502066
Leached Chromium (Cr)	ug/L	<7.0	<7.0	<7.0	<7.0	7.0	2502066
Leached Cobalt (Co)	ug/L	<10	<10	<10	<10	10	2502066
Leached Copper (Cu)	ug/L	<3.0	<3.0	<3.0	<3.0	3.0	2502066
Leached Tin (Sn) †	ug/L	<50	<50	<50	<50	50	2502066
Leached Iron (Fe)	ug/L	<100	<100	340	110	100	2502066
Leached Manganese (Mn)	ug/L	59	7.6	40	16	3.0	2502066
Leached Mercury (Hg)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	2502066
Leached Molybdenum (Mo)	ug/L	<10	<10	<10	<10	10	2502066
Leached Nickel (Ni)	ug/L	<6.0	<6.0	<6.0	<6.0	6.0	2502066
Leached Lead (Pb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2502066
Leached Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	2502066
Leached Uranium (U)	ug/L	<0.60	<0.60	<0.60	<0.60	0.60	2502066
Leached Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	2502066

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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Bureau Veritas Job #: C407950
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

CONVENTIONAL PARAMETERS (SOIL)

Bureau Veritas ID		MS5890	MS5891	MS5892	MS5893	MS5893		
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19	2024/02/19		
COC Number		119612	119612	119612	119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	TSMC-103998-GD Lab-Dup	RDL	QC Batch
% MOISTURE	%	18	15	11	10	10	N/A	N/A
CONVENTIONALS								
Fluoride (F)	mg/kg	<1.0	<1.0	<1.0	<1.0	N/A	1.0	2496808
Sulfur (S)	% g/g	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	2498645
Nitrates (N-NO3-) †	mg/kg	9.3	3.2	2.3	1.8	N/A	1.0	2496809
Nitrites (N-NO2-) †	mg/kg	<0.20	<0.20	<0.20	<0.20	N/A	0.20	2496809

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MS5894	MS5895	MS5896	MS5897		
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19		
COC Number		119612	119612	119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	RDL	QC Batch
CONVENTIONALS							
Leached Fluoride (F)	mg/L	<1.0	<1.0	<1.0	<1.0	1.0	2497088
Leached Nitrites (N-NO2-)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20	2497089
Leached Nitrates (N-NO3-)	mg/L	0.52	<0.20	<0.20	<0.20	0.20	2497089
Leached Nitrate (N) and Nitrite(N)	mg/L	0.52	<0.20	<0.20	<0.20	0.20	2497089

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		MS5898	MS5899	MS5900	MS5901		
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19		
COC Number		119612	119612	119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	RDL	QC Batch
CONVENTIONALS							
Leached Fluoride (F)	mg/L	<1.0	<1.0	<1.0	<1.0	1.0	2501029
Leached Nitrites (N-NO2-)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20	2501033

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		MS5918	MS5920	MS5921	MS5922		
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19		
COC Number		119612	119612	119612	119612		
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	RDL	QC Batch
CONVENTIONALS							
Leached Fluoride (F)	mg/L	<1.0	<1.0	<1.0	<1.0	1.0	2502067
Leached Nitrites (N-NO2-)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20	2502068
Leached Nitrates (N-NO3-)	mg/L	2.8	1.1	0.50	0.51	0.20	2502068
Leached Nitrate (N) and Nitrite(N)	mg/L	2.8	1.1	0.50	0.51	0.20	2502068

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TCLP-EPA 1311 (SOIL)

Bureau Veritas ID		MS5894	MS5895	MS5896	MS5897	
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19	
COC Number		119612	119612	119612	119612	
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	QC Batch
Leachates						
Weight of sample (g)	n/a	20.2	20.0	20.1	20.2	2496543
pH of pre-test	n/a	<1.68	<1.68	<1.68	<1.68	2496543
pH end of leaching	n/a	4.93	4.92	4.94	4.94	2496543
Volume extracting fluid 1 (ml)	n/a	400	400	400	400	2496543
QC Batch = Quality Control Batch						

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SPLP-EPA 1312 (SOIL)

Bureau Veritas ID		MS5898	MS5899	MS5900	MS5901	
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19	
COC Number		119612	119612	119612	119612	
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	QC Batch
Leachates						
Weight of sample (g)	n/a	25.2	25.1	25.1	25.0	2499547
Volume of extracting fluid (mL)	n/a	500	500	500	500	2499547
pH after 18 hours leaching	n/a	5.21	5.51	6.21	5.88	2499547
pH of extracting fluid	n/a	4.16	4.16	4.16	4.16	2499547

QC Batch = Quality Control Batch

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

WATER LEACHATE-CTEU-9 (SOIL)

Bureau Veritas ID		MS5918	MS5920	MS5921	MS5922	
Sampling Date		2024/02/17	2024/02/17	2024/02/19	2024/02/19	
COC Number		119612	119612	119612	119612	
	Units	TSMC-103995-GD	TSMC-103996-GD	TSMC-103997-GD	TSMC-103998-GD	QC Batch
Leachates						
Weight of sample (g)	n/a	40.1	40.1	40.1	40.1	2497268
pH Deionized water	n/a	6.08	6.08	6.08	6.08	2497268
Date extraction fluid added	n/a	2024/02/28	2024/02/28	2024/02/28	2024/02/28	2497268
Date leaching terminated	n/a	2024/03/06	2024/03/06	2024/03/06	2024/03/06	2497268
Volume of extracting fluid (mL)	n/a	160	160	160	160	2497268
pH after 7 days of leaching	n/a	7.19	6.70	7.09	7.13	2497268

QC Batch = Quality Control Batch

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GENERAL COMMENTS

Revised report: As per client request received by e-mail on January 15, 2025, Hg has been added to the parameters reported.

TOTAL EXTRACTABLE METALS (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (SOIL)

pH of pre-test: Please note that result for sample MS5894, MS5895, MS5896 and MS5897 iis outside our calibration range and outside the limit of linearity.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2496543	HK3	Method Blank	pH end of leaching	2024/02/27	4.92/2.92		n/a
			Volume extracting fluid 1 (ml)	2024/02/27	400		n/a
2496688	CBO	Spiked Blank	Total Extractable Silver (Ag)	2024/02/28		94	%
			Total Extractable Arsenic (As)	2024/02/28		94	%
			Total Extractable Barium (Ba)	2024/02/28		97	%
			Total Extractable Boron (B)	2024/02/28		99	%
			Total Extractable Cadmium (Cd)	2024/02/28		93	%
			Total Extractable Chromium (Cr)	2024/02/28		96	%
			Total Extractable Copper (Cu)	2024/02/28		96	%
			Total Extractable Cobalt (Co)	2024/02/28		96	%
			Total Extractable Tin (Sn)	2024/02/28		99	%
			Total Extractable Iron (Fe)	2024/02/28		95	%
			Total Extractable Manganese (Mn)	2024/02/28		91	%
			Total Extractable Molybdenum (Mo)	2024/02/28		93	%
			Total Extractable Nickel (Ni)	2024/02/28		89	%
			Total Extractable Mercury (Hg)	2024/02/28		93	%
			Total Extractable Lead (Pb)	2024/02/28		99	%
			Total Extractable Selenium (Se)	2024/02/28		93	%
			Total Extractable Uranium (U)	2024/02/28		102	%
			Total Extractable Zinc (Zn)	2024/02/28		91	%
2496688	CBO	Method Blank	Total Extractable Silver (Ag)	2024/02/28	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/02/28	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/02/28	<4.0		mg/kg
			Total Extractable Boron (B)	2024/02/28	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/02/28	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/02/28	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/02/28	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/02/28	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/02/28	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/02/28	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/02/28	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/02/28	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/02/28	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/02/28	<0.010		mg/kg
			Total Extractable Lead (Pb)	2024/02/28	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/02/28	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/02/28	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/02/28	<5.0		mg/kg
2496808	ZLI	Spiked Blank	Fluoride (F)	2024/03/01		95	%
2496808	ZLI	Method Blank	Fluoride (F)	2024/03/01	<1.0		mg/kg
2496809	ZZH	Spiked Blank	Nitrates (N-NO3-)	2024/02/27		103	%
			Nitrites (N-NO2-)	2024/02/27		105	%
2496809	ZZH	Method Blank	Nitrates (N-NO3-)	2024/02/27	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/02/27	<0.20		mg/kg
2497088	ZLI	LEACH. BLANK	Leached Fluoride (F)	2024/03/01	<1.0		mg/L
2497088	ZLI	Spiked Blank	Leached Fluoride (F)	2024/03/01		99	%
2497089	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/02/28	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/02/28	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/02/28	<0.20		mg/L
2497089	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/02/28		111	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Nitrates (N-NO3-)	2024/02/28		100	%
			Leached Nitrate (N) and Nitrite(N)	2024/02/28		106	%
2497192	ST5	LEACH. BLANK	Leached Silver (Ag)	2024/02/29	<0.30		ug/L
			Leached Arsenic (As)	2024/02/29	<2.0		ug/L
			Leached Barium (Ba)	2024/02/29	<5.0		ug/L
			Leached Boron (B)	2024/02/29	<50		ug/L
			Leached Cadmium (Cd)	2024/02/29	<1.0		ug/L
			Leached Chromium (Cr)	2024/02/29	<7.0		ug/L
			Leached Cobalt (Co)	2024/02/29	<10		ug/L
			Leached Copper (Cu)	2024/02/29	<6.5		ug/L
			Leached Tin (Sn)	2024/02/29	<50		ug/L
			Leached Iron (Fe)	2024/02/29	<100		ug/L
			Leached Manganese (Mn)	2024/02/29	<3.0		ug/L
			Leached Mercury (Hg)	2024/02/29	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/02/29	<10		ug/L
			Leached Nickel (Ni)	2024/02/29	<6.0		ug/L
			Leached Lead (Pb)	2024/02/29	<1.0		ug/L
			Leached Selenium (Se)	2024/02/29	<1.0		ug/L
			Leached Uranium (U)	2024/02/29	<0.60		ug/L
			Leached Zinc (Zn)	2024/02/29	<5.0		ug/L
2497192	ST5	Spiked Blank	Leached Silver (Ag)	2024/02/29		97	%
			Leached Arsenic (As)	2024/02/29		103	%
			Leached Barium (Ba)	2024/02/29		106	%
			Leached Boron (B)	2024/02/29		97	%
			Leached Cadmium (Cd)	2024/02/29		104	%
			Leached Chromium (Cr)	2024/02/29		107	%
			Leached Cobalt (Co)	2024/02/29		104	%
			Leached Copper (Cu)	2024/02/29		102	%
			Leached Tin (Sn)	2024/02/29		108	%
			Leached Iron (Fe)	2024/02/29		109	%
			Leached Manganese (Mn)	2024/02/29		107	%
			Leached Mercury (Hg)	2024/02/29		104	%
			Leached Molybdenum (Mo)	2024/02/29		106	%
			Leached Nickel (Ni)	2024/02/29		102	%
			Leached Lead (Pb)	2024/02/29		104	%
			Leached Selenium (Se)	2024/02/29		103	%
			Leached Uranium (U)	2024/02/29		103	%
			Leached Zinc (Zn)	2024/02/29		103	%
2497192	ST5	Method Blank	Leached Silver (Ag)	2024/02/29	<0.30		ug/L
			Leached Arsenic (As)	2024/02/29	<2.0		ug/L
			Leached Barium (Ba)	2024/02/29	<5.0		ug/L
			Leached Boron (B)	2024/02/29	<50		ug/L
			Leached Cadmium (Cd)	2024/02/29	<1.0		ug/L
			Leached Chromium (Cr)	2024/02/29	<7.0		ug/L
			Leached Cobalt (Co)	2024/02/29	<10		ug/L
			Leached Copper (Cu)	2024/02/29	<3.0		ug/L
			Leached Tin (Sn)	2024/02/29	<50		ug/L
			Leached Iron (Fe)	2024/02/29	<100		ug/L
			Leached Manganese (Mn)	2024/02/29	<3.0		ug/L
			Leached Mercury (Hg)	2024/02/29	<0.50		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Molybdenum (Mo)	2024/02/29	<10		ug/L
			Leached Nickel (Ni)	2024/02/29	<6.0		ug/L
			Leached Lead (Pb)	2024/02/29	<1.0		ug/L
			Leached Selenium (Se)	2024/02/29	<1.0		ug/L
			Leached Uranium (U)	2024/02/29	<0.60		ug/L
			Leached Zinc (Zn)	2024/02/29	<5.0		ug/L
2497268	HK3	Method Blank	pH Deionized water	2024/03/06	6.08		n/a
			Date extraction fluid added	2024/03/06	2024/02/28		n/a
			Date leaching terminated	2024/03/06	2024/03/06		n/a
			Volume of extracting fluid (mL)	2024/03/06	160		n/a
			pH after 7 days of leaching	2024/03/06	6.90		n/a
2498645	BAG	QC Standard	Sulfur (S)	2024/02/29		92	%
2498645	BAG	Method Blank	Sulfur (S)	2024/02/29	<0.010		% g/g
2499547	HK3	Method Blank	Volume of extracting fluid (mL)	2024/03/01	500		n/a
			pH after 18 hours leaching	2024/03/01	4.19		n/a
			pH of extracting fluid	2024/03/01	4.16		n/a
2501029	LTA	LEACH. BLANK	Leached Fluoride (F)	2024/03/02	<1.0		mg/L
2501029	LTA	Spiked Blank	Leached Fluoride (F)	2024/03/02		102	%
2501033	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/03/01	<0.20		mg/L
2501033	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/03/01		96	%
2501091	ST5	LEACH. BLANK	Leached Silver (Ag)	2024/03/04	<0.30		ug/L
			Leached Arsenic (As)	2024/03/04	<2.0		ug/L
			Leached Barium (Ba)	2024/03/04	<5.0		ug/L
			Leached Boron (B)	2024/03/04	<50		ug/L
			Leached Cadmium (Cd)	2024/03/04	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/04	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/04	<10		ug/L
			Leached Copper (Cu)	2024/03/04	<3.0		ug/L
			Leached Tin (Sn)	2024/03/04	<50		ug/L
			Leached Iron (Fe)	2024/03/04	<100		ug/L
			Leached Manganese (Mn)	2024/03/04	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/04	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/04	<10		ug/L
			Leached Nickel (Ni)	2024/03/04	<6.0		ug/L
			Leached Lead (Pb)	2024/03/04	<1.0		ug/L
			Leached Selenium (Se)	2024/03/04	<1.0		ug/L
			Leached Uranium (U)	2024/03/04	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/04	<5.0		ug/L
2501091	ST5	Spiked Blank	Leached Silver (Ag)	2024/03/04		103	%
			Leached Arsenic (As)	2024/03/04		103	%
			Leached Barium (Ba)	2024/03/04		104	%
			Leached Boron (B)	2024/03/04		101	%
			Leached Cadmium (Cd)	2024/03/04		106	%
			Leached Chromium (Cr)	2024/03/04		100	%
			Leached Cobalt (Co)	2024/03/04		98	%
			Leached Copper (Cu)	2024/03/04		96	%
			Leached Tin (Sn)	2024/03/04		114	%
			Leached Iron (Fe)	2024/03/04		111	%
			Leached Manganese (Mn)	2024/03/04		103	%
			Leached Mercury (Hg)	2024/03/04		101	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Molybdenum (Mo)	2024/03/04		107	%
			Leached Nickel (Ni)	2024/03/04		97	%
			Leached Lead (Pb)	2024/03/04		106	%
			Leached Selenium (Se)	2024/03/04		104	%
			Leached Uranium (U)	2024/03/04		102	%
			Leached Zinc (Zn)	2024/03/04		102	%
2501091	ST5	Method Blank	Leached Silver (Ag)	2024/03/04	<0.30		ug/L
			Leached Arsenic (As)	2024/03/04	<2.0		ug/L
			Leached Barium (Ba)	2024/03/04	<5.0		ug/L
			Leached Boron (B)	2024/03/04	<50		ug/L
			Leached Cadmium (Cd)	2024/03/04	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/04	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/04	<10		ug/L
			Leached Copper (Cu)	2024/03/04	<3.0		ug/L
			Leached Tin (Sn)	2024/03/04	<50		ug/L
			Leached Iron (Fe)	2024/03/04	<100		ug/L
			Leached Manganese (Mn)	2024/03/04	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/04	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/04	<10		ug/L
			Leached Nickel (Ni)	2024/03/04	<6.0		ug/L
			Leached Lead (Pb)	2024/03/04	<1.0		ug/L
			Leached Selenium (Se)	2024/03/04	<1.0		ug/L
			Leached Uranium (U)	2024/03/04	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/04	<5.0		ug/L
2502066	ZEO	LEACH. BLANK	Leached Silver (Ag)	2024/03/06	<0.30		ug/L
			Leached Arsenic (As)	2024/03/06	<2.0		ug/L
			Leached Barium (Ba)	2024/03/06	<5.0		ug/L
			Leached Boron (B)	2024/03/06	<50		ug/L
			Leached Cadmium (Cd)	2024/03/06	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/06	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/06	<10		ug/L
			Leached Copper (Cu)	2024/03/06	<3.0		ug/L
			Leached Tin (Sn)	2024/03/06	<50		ug/L
			Leached Iron (Fe)	2024/03/06	<100		ug/L
			Leached Manganese (Mn)	2024/03/06	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/06	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/06	<10		ug/L
			Leached Nickel (Ni)	2024/03/06	<6.0		ug/L
			Leached Lead (Pb)	2024/03/06	<1.0		ug/L
			Leached Selenium (Se)	2024/03/06	<1.0		ug/L
			Leached Uranium (U)	2024/03/06	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/06	<5.0		ug/L
2502066	ZEO	Spiked Blank	Leached Silver (Ag)	2024/03/06		102	%
			Leached Arsenic (As)	2024/03/06		94	%
			Leached Barium (Ba)	2024/03/06		93	%
			Leached Boron (B)	2024/03/06		96	%
			Leached Cadmium (Cd)	2024/03/06		97	%
			Leached Chromium (Cr)	2024/03/06		93	%
			Leached Cobalt (Co)	2024/03/06		92	%
			Leached Copper (Cu)	2024/03/06		92	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Tin (Sn)	2024/03/06		103	%
			Leached Iron (Fe)	2024/03/06		95	%
			Leached Manganese (Mn)	2024/03/06		93	%
			Leached Mercury (Hg)	2024/03/06		99	%
			Leached Molybdenum (Mo)	2024/03/06		95	%
			Leached Nickel (Ni)	2024/03/06		90	%
			Leached Lead (Pb)	2024/03/06		96	%
			Leached Selenium (Se)	2024/03/06		93	%
			Leached Uranium (U)	2024/03/06		96	%
			Leached Zinc (Zn)	2024/03/06		93	%
2502066	ZEO	Method Blank	Leached Silver (Ag)	2024/03/06	<0.30		ug/L
			Leached Arsenic (As)	2024/03/06	<2.0		ug/L
			Leached Barium (Ba)	2024/03/06	<5.0		ug/L
			Leached Boron (B)	2024/03/06	<50		ug/L
			Leached Cadmium (Cd)	2024/03/06	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/06	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/06	<10		ug/L
			Leached Copper (Cu)	2024/03/06	<3.0		ug/L
			Leached Tin (Sn)	2024/03/06	<50		ug/L
			Leached Iron (Fe)	2024/03/06	<100		ug/L
			Leached Manganese (Mn)	2024/03/06	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/06	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/06	<10		ug/L
			Leached Nickel (Ni)	2024/03/06	<6.0		ug/L
			Leached Lead (Pb)	2024/03/06	<1.0		ug/L
			Leached Selenium (Se)	2024/03/06	<1.0		ug/L
			Leached Uranium (U)	2024/03/06	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/06	<5.0		ug/L
2502067	ZLI	LEACH. BLANK	Leached Fluoride (F)	2024/03/06	<1.0		mg/L
2502067	ZLI	Spiked Blank	Leached Fluoride (F)	2024/03/06		97	%
2502068	ZLI	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/03/06	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/03/06	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/03/06	<0.20		mg/L
2502068	ZLI	Spiked Blank	Leached Nitrites (N-NO2-)	2024/03/06		95	%
			Leached Nitrates (N-NO3-)	2024/03/06		100	%
			Leached Nitrate (N) and Nitrite(N)	2024/03/06		98	%

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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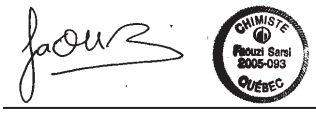
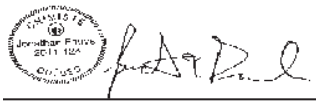
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

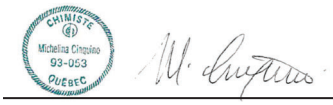


Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst



Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader



Michelina Cinquino, Analyst II

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Submitted By:	Notification List
Receiving Lab:	Maxxam - Burnaby, BC
Received:	March 20, 2024
Analysis Start:	March 20, 2024
Report Date:	March 21, 2024
Page:	1 of 2

CERTIFICATE OF ANALYSIS VAN24000571.1

CLIENT JOB INFORMATION

Project:	C413974
Shipment ID:	
P.O. Number	C413974
Number of Samples:	4

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	52	Sorting, labeling and boxing samples received as pulps		Order Cancella	VAN
TC000-S	4	Total S Analysis by Leco	0.1	Completed	VAN

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Bureau Veritas Canada (2019) Inc.
4606 Canada Way
Burnaby British Columbia V5G 1K5
Canada

CC: Email Distribution List

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C413974
Report Date: March 21, 2024

CERTIFICATE OF ANALYSIS VAN24000571.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
CJY563-MS5890-01R-TSMC-103995	Pulp		<0.02
CJY564-MS5891-01R-TSMC-103996	Pulp		<0.02
CJY565-MS5892-01R-TSMC-103997	Pulp		<0.02
CJY566-MS5893-01R-TSMC-103998	Pulp		<0.02

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BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C413974

Report Date: March 21, 2024

QUALITY CONTROL REPORT VAN24000571.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
Reference Materials			
STD GS311-1	Standard		2.39
STD GS910-4	Standard		8.32
STD GS311-1 Expected			2.35
STD GS910-4 Expected			8.27
BLK	Blank		<0.02

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

Your P.O. #: 3000001617
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 123525

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015674
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C412829
Received: 2024/03/21, 15:40

Sample Matrix: Rock
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	2	N/A	N/A		
Fluoride (free) in soils	2	2024/03/28	2024/03/28	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	4	N/A	2024/03/26	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	2	N/A	2024/04/02	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	2	2024/03/25	2024/04/01	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	2	2024/03/25	2024/03/26	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	2	2024/03/29	2024/03/29	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	1	2024/03/26	2024/03/26	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	1	2024/03/26	2024/03/27	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	2	2024/03/27	2024/03/29	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	2	2024/04/03	2024/04/05	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/03/26	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/03/27	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/04/02	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	2	2024/04/01	2024/04/01	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	2	N/A	2024/03/29	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	2	2024/03/25	2024/03/26	STL SOP-00024	MA100-Lixcom1.1 R1 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the

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Your P.O. #: 3000001617
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 123525

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015674
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C412829
Received: 2024/03/21, 15:40
customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
24 Jan 2025 14:29:04

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

TOTAL EXTRACTABLE METALS (ROCK)

Bureau Veritas ID		MU5584		MU5588		
Sampling Date		2024/03/16		2024/03/16		
COC Number		123525		123525		
	Units	TSMC-104343-GD	RDL	TSMC-104344-GD	RDL	QC Batch
METALS						
Total Extractable Silver (Ag)	mg/kg	<0.50	0.50	<0.50	0.50	2507675
Total Extractable Arsenic (As)	mg/kg	<2.0	2.0	<2.0	2.0	2507675
Total Extractable Barium (Ba)	mg/kg	<4.0	4.0	<4.0	4.0	2507675
Total Extractable Boron (B)	mg/kg	2.0	2.0	<2.0	2.0	2507675
Total Extractable Cadmium (Cd)	mg/kg	<0.10	0.10	<0.10	0.10	2507675
Total Extractable Chromium (Cr)	mg/kg	<1.0	1.0	<1.0	1.0	2507675
Total Extractable Copper (Cu)	mg/kg	<1.0	1.0	1.4	1.0	2507675
Total Extractable Cobalt (Co)	mg/kg	<1.0	1.0	<1.0	1.0	2507675
Total Extractable Tin (Sn)	mg/kg	<1.0	1.0	<1.0	1.0	2507675
Total Extractable Iron (Fe) †	mg/kg	35000	10	140000	100	2507675
Total Extractable Manganese (Mn)	mg/kg	19	2.0	66	2.0	2507675
Total Extractable Molybdenum (Mo)	mg/kg	<0.50	0.50	<0.50	0.50	2507675
Total Extractable Nickel (Ni)	mg/kg	0.70	0.50	1.5	0.50	2507675
Total Extractable Mercury (Hg)	mg/kg	0.014	0.010	0.044	0.010	2507675
Total Extractable Lead (Pb)	mg/kg	<1.0	1.0	<1.0	1.0	2507675
Total Extractable Selenium (Se)	mg/kg	<0.50	0.50	<0.50	0.50	2507675
Total Extractable Uranium (U) †	mg/kg	<2.0	2.0	<2.0	2.0	2507675
Total Extractable Zinc (Zn)	mg/kg	<5.0	5.0	<5.0	5.0	2507675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		MU5585			MU5586		
Sampling Date		2024/03/16			2024/03/16		
COC Number		123525			123525		
	Units	TSMC-104343-GD (TCLP)	RDL	QC Batch	TSMC-104343-GD (SPLP 1312)	RDL	QC Batch
METALS							
Leached Silver (Ag) †	ug/L	<0.30	0.30	2506849	<0.30	0.30	2507244
Leached Arsenic (As)	ug/L	<2.0	2.0	2506849	<2.0	2.0	2507244
Leached Barium (Ba)	ug/L	<5.0	5.0	2506849	<5.0	5.0	2507244
Leached Boron (B)	ug/L	<50	50	2506849	<50	50	2507244
Leached Cadmium (Cd)	ug/L	<1.0	1.0	2506849	<1.0	1.0	2507244
Leached Chromium (Cr)	ug/L	<7.0	7.0	2506849	<7.0	7.0	2507244
Leached Cobalt (Co)	ug/L	<10	10	2506849	<10	10	2507244
Leached Copper (Cu)	ug/L	<8.5 (1)	8.5	2506849	<3.0	3.0	2507244
Leached Tin (Sn) †	ug/L	<50	50	2506849	<50	50	2507244
Leached Iron (Fe)	ug/L	100	100	2506849	<100	100	2507244
Leached Manganese (Mn)	ug/L	20	3.0	2506849	38	3.0	2507244
Leached Mercury (Hg)	ug/L	<0.50	0.50	2506849	<0.50	0.50	2507244
Leached Molybdenum (Mo)	ug/L	<10	10	2506849	<10	10	2507244
Leached Nickel (Ni)	ug/L	<6.0	6.0	2506849	<6.0	6.0	2507244
Leached Lead (Pb)	ug/L	1.0	1.0	2506849	<1.0	1.0	2507244
Leached Selenium (Se)	ug/L	<1.0	1.0	2506849	<1.0	1.0	2507244
Leached Uranium (U)	ug/L	<0.60	0.60	2506849	<0.60	0.60	2507244
Leached Zinc (Zn)	ug/L	<5.0	5.0	2506849	<5.0	5.0	2507244

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) The detection limit was raised due to instrumentation.

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Bureau Veritas Job #: C412829
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		MU5587			MU5589	MU5589		
Sampling Date		2024/03/16			2024/03/16	2024/03/16		
COC Number		123525			123525	123525		
	Units	TSMC-104343-GD (CTEU-9)	RDL	QC Batch	TSMC-104344-GD (TCLP)	TSMC-104344-GD (TCLP) Lab-Dup	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	0.30	2508578	<0.30	<0.30	0.30	2506849
Leached Arsenic (As)	ug/L	<2.0	2.0	2508578	<2.0	<2.0	2.0	2506849
Leached Barium (Ba)	ug/L	<5.0	5.0	2508578	5.8	<5.0	5.0	2506849
Leached Boron (B)	ug/L	<50	50	2508578	<50	<50	50	2506849
Leached Cadmium (Cd)	ug/L	<1.0	1.0	2508578	<1.0	<1.0	1.0	2506849
Leached Chromium (Cr)	ug/L	<7.0	7.0	2508578	<7.0	<7.0	7.0	2506849
Leached Cobalt (Co)	ug/L	<10	10	2508578	<10	<10	10	2506849
Leached Copper (Cu)	ug/L	<3.0	3.0	2508578	<8.5 (1)	<8.5 (1)	8.5	2506849
Leached Tin (Sn) †	ug/L	<50	50	2508578	<50	<50	50	2506849
Leached Iron (Fe)	ug/L	1500	100	2508578	130	100	100	2506849
Leached Manganese (Mn)	ug/L	13	3.0	2508578	9.6	9.2	3.0	2506849
Leached Mercury (Hg)	ug/L	<0.50	0.50	2508578	<0.50	<0.50	0.50	2506849
Leached Molybdenum (Mo)	ug/L	<10	10	2508578	<10	<10	10	2506849
Leached Nickel (Ni)	ug/L	<6.0	6.0	2508578	<6.0	<6.0	6.0	2506849
Leached Lead (Pb)	ug/L	<1.0	1.0	2508578	<1.0	<1.0	1.0	2506849
Leached Selenium (Se)	ug/L	<1.0	1.0	2508578	<1.0	<1.0	1.0	2506849
Leached Uranium (U)	ug/L	<0.60	0.60	2508578	0.80	0.75	0.60	2506849
Leached Zinc (Zn)	ug/L	<5.0	5.0	2508578	<5.0	<5.0	5.0	2506849

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) The detection limit was raised due to instrumentation.

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		MU5590		MU5591		
Sampling Date		2024/03/16		2024/03/16		
COC Number		123525		123525		
	Units	TSMC-104344-GD (SPLP 1312)	QC Batch	TSMC-104344-GD (CTEU-9)	RDL	QC Batch
METALS						
Leached Silver (Ag) †	ug/L	<0.30	2507244	<0.30	0.30	2508578
Leached Arsenic (As)	ug/L	<2.0	2507244	<2.0	2.0	2508578
Leached Barium (Ba)	ug/L	<5.0	2507244	<5.0	5.0	2508578
Leached Boron (B)	ug/L	<50	2507244	<50	50	2508578
Leached Cadmium (Cd)	ug/L	<1.0	2507244	<1.0	1.0	2508578
Leached Chromium (Cr)	ug/L	<7.0	2507244	<7.0	7.0	2508578
Leached Cobalt (Co)	ug/L	<10	2507244	<10	10	2508578
Leached Copper (Cu)	ug/L	<3.0	2507244	<3.0	3.0	2508578
Leached Tin (Sn) †	ug/L	<50	2507244	<50	50	2508578
Leached Iron (Fe)	ug/L	<100	2507244	<100	100	2508578
Leached Manganese (Mn)	ug/L	<3.0	2507244	<3.0	3.0	2508578
Leached Mercury (Hg)	ug/L	<0.50	2507244	<0.50	0.50	2508578
Leached Molybdenum (Mo)	ug/L	<10	2507244	<10	10	2508578
Leached Nickel (Ni)	ug/L	<6.0	2507244	<6.0	6.0	2508578
Leached Lead (Pb)	ug/L	<1.0	2507244	<1.0	1.0	2508578
Leached Selenium (Se)	ug/L	<1.0	2507244	<1.0	1.0	2508578
Leached Uranium (U)	ug/L	<0.60	2507244	<0.60	0.60	2508578
Leached Zinc (Zn)	ug/L	8.2	2507244	<5.0	5.0	2508578

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

CONVENTIONAL PARAMETERS (ROCK)

Bureau Veritas ID		MU5584	MU5588		
Sampling Date		2024/03/16	2024/03/16		
COC Number		123525	123525		
	Units	TSMC-104343-GD	TSMC-104344-GD	RDL	QC Batch
CONVENTIONALS					
Fluoride (F)	mg/kg	<1.0	2.3	1.0	2507611
Sulfur (S)	% g/g	0.023	0.016	0.010	2507726
Nitrates (N-NO3-) †	mg/kg	<1.0	<1.0	1.0	2508010
Nitrites (N-NO2-) †	mg/kg	<0.20	0.69	0.20	2508010

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Bureau Veritas ID		MU5585		MU5586		
Sampling Date		2024/03/16		2024/03/16		
COC Number		123525		123525		
	Units	TSMC-104343-GD (TCLP)	QC Batch	TSMC-104343-GD (SPLP 1312)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2506841	<1.0	1.0	2506843
Leached Nitrites (N-NO2-)	mg/L	<0.20	2506839	<0.20	0.20	2506842
Leached Nitrates (N-NO3-)	mg/L	<0.20	2506839	N/A	0.20	N/A
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2506839	N/A	0.20	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		MU5587		MU5589		
Sampling Date		2024/03/16		2024/03/16		
COC Number		123525		123525		
	Units	TSMC-104343-GD (CTEU-9)	QC Batch	TSMC-104344-GD (TCLP)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2508138	<1.0	1.0	2506841
Leached Nitrites (N-NO2-)	mg/L	<0.20	2508141	<0.20	0.20	2506839
Leached Nitrates (N-NO3-)	mg/L	<0.20	2508141	<0.20	0.20	2506839
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2508141	<0.20	0.20	2506839

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		MU5590		MU5591		
Sampling Date		2024/03/16		2024/03/16		
COC Number		123525		123525		
	Units	TSMC-104344-GD (SPLP 1312)	QC Batch	TSMC-104344-GD (CTEU-9)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2506843	1.1	1.0	2508138
Leached Nitrites (N-NO2-)	mg/L	<0.20	2506842	0.22	0.20	2508141
Leached Nitrates (N-NO3-)	mg/L	N/A	N/A	0.28	0.20	2508141
Leached Nitrate (N) and Nitrite(N)	mg/L	N/A	N/A	0.50	0.20	2508141

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TCLP-EPA 1311 (ROCK)

Bureau Veritas ID		MU5585	MU5589	MU5589	
Sampling Date		2024/03/16	2024/03/16	2024/03/16	
COC Number		123525	123525	123525	
	Units	TSMC-104343-GD (TCLP)	TSMC-104344-GD (TCLP)	TSMC-104344-GD (TCLP) Lab-Dup	QC Batch
Leachates					
Weight of sample (g)	n/a	20.1	20.0	20.1	2506415
pH of pre-test	n/a	<1.68	<1.68	<1.68	2506415
pH end of leaching	n/a	4.91	4.92	4.92	2506415
Volume extracting fluid 1 (ml)	n/a	400	400	400	2506415

QC Batch = Quality Control Batch

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SPLP-EPA 1312 (ROCK)

Bureau Veritas ID		MU5586	MU5590	
Sampling Date		2024/03/16	2024/03/16	
COC Number		123525	123525	
	Units	TSMC-104343-GD (SPLP 1312)	TSMC-104344-GD (SPLP 1312)	QC Batch
Leachates				
Weight of sample (g)	n/a	25.0	25.1	2506448
Volume of extracting fluid (mL)	n/a	500	500	2506448
pH after 18 hours leaching	n/a	6.00	6.78	2506448
pH of extracting fluid	n/a	4.19	4.19	2506448
QC Batch = Quality Control Batch				

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WATER LEACHATE-CTEU-9 (ROCK)

Bureau Veritas ID		MU5587	MU5587	MU5591	
Sampling Date		2024/03/16	2024/03/16	2024/03/16	
COC Number		123525	123525	123525	
	Units	TSMC-104343-GD (CTEU-9)	TSMC-104343-GD (CTEU-9) Lab-Dup	TSMC-104344-GD (CTEU-9)	QC Batch
Leachates					
Weight of sample (g)	n/a	40.1	40.1	40.1	2506393
pH Deionized water	n/a	6.12	6.12	6.12	2506393
Date extraction fluid added	n/a	2024/03/25	2024/03/25	2024/03/25	2506393
Date leaching terminated	n/a	2024/04/01	2024/04/01	2024/04/01	2506393
Volume of extracting fluid (mL)	n/a	160	160	160	2506393
pH after 7 days of leaching	n/a	7.81	8.15	8.43	2506393

QC Batch = Quality Control Batch

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GENERAL COMMENTS

Revised report: As per client request received by e-mail on January 15, 2055, Hg has been added to the parameters reported.

TOTAL EXTRACTABLE METALS (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

METALS-LAB LEACHATE (ROCK)

MU5586 & MU5590: Please note that barium concentrations measured in leachates to simulate acid rain (SPLP EPA 1312) may be underestimated due to possible formation of a barium sulfate precipitate caused by the sulfuric acid present in the leaching solution. Please use the results with discretion.

CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (ROCK)

pH du pré-test: Veuillez noter que le résultat des échantillons MU5585, MU5589 et MU5589DUP sont en dehors de la courbe de calibration (pH 4 - 10), et aussi dehors des limites de la linéarité (pH 1.68 - 13.0).

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2506393	HK3	Method Blank	pH Deionized water	2024/04/01	6.12		n/a
			Date extraction fluid added	2024/04/01	2024/03/25		n/a
			Date leaching terminated	2024/04/01	2024/04/01		n/a
			Volume of extracting fluid (mL)	2024/04/01	160		n/a
			pH after 7 days of leaching	2024/04/01	6.96		n/a
2506415	HK3	Method Blank	pH end of leaching	2024/03/26	4.91/2.90		n/a
			Volume extracting fluid 1 (ml)	2024/03/26	400		n/a
2506448	HK3	Method Blank	Volume of extracting fluid (mL)	2024/03/26	500		n/a
			pH after 18 hours leaching	2024/03/26	4.24		n/a
			pH of extracting fluid	2024/03/26	4.19		n/a
2506839	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/03/26	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/03/26	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/03/26	<0.20		mg/L
2506839	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/03/26		96	%
			Leached Nitrates (N-NO3-)	2024/03/26		97	%
			Leached Nitrate (N) and Nitrite(N)	2024/03/26		96	%
2506841	LTA	LEACH. BLANK	Leached Fluoride (F)	2024/03/26	<1.0		mg/L
2506841	LTA	Spiked Blank	Leached Fluoride (F)	2024/03/26		97	%
2506842	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/03/26	<0.20		mg/L
2506842	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/03/26		96	%
2506843	LTA	LEACH. BLANK	Leached Fluoride (F)	2024/03/26	0.36, RDL=0.10		mg/L
2506843	LTA	Spiked Blank	Leached Fluoride (F)	2024/03/26		97	%
2506849	ST5	LEACH. BLANK	Leached Silver (Ag)	2024/03/26	<0.30		ug/L
			Leached Arsenic (As)	2024/03/26	<2.0		ug/L
			Leached Barium (Ba)	2024/03/26	<5.0		ug/L
			Leached Boron (B)	2024/03/26	<50		ug/L
			Leached Cadmium (Cd)	2024/03/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/26	<10		ug/L
			Leached Copper (Cu)	2024/03/26	<8.5		ug/L
			Leached Tin (Sn)	2024/03/26	<50		ug/L
			Leached Iron (Fe)	2024/03/26	<100		ug/L
			Leached Manganese (Mn)	2024/03/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/26	<10		ug/L
			Leached Nickel (Ni)	2024/03/26	<6.0		ug/L
			Leached Lead (Pb)	2024/03/26	<1.0		ug/L
			Leached Selenium (Se)	2024/03/26	<1.0		ug/L
			Leached Uranium (U)	2024/03/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/26	<5.0		ug/L
2506849	ST5	Spiked Blank	Leached Silver (Ag)	2024/03/26		92	%
			Leached Arsenic (As)	2024/03/26		93	%
			Leached Barium (Ba)	2024/03/26		87	%
			Leached Boron (B)	2024/03/26		92	%
			Leached Cadmium (Cd)	2024/03/26		86	%
			Leached Chromium (Cr)	2024/03/26		91	%
			Leached Cobalt (Co)	2024/03/26		86	%
			Leached Copper (Cu)	2024/03/26		90	%
			Leached Tin (Sn)	2024/03/26		95	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Iron (Fe)	2024/03/26		88	%
			Leached Manganese (Mn)	2024/03/26		89	%
			Leached Mercury (Hg)	2024/03/26		88	%
			Leached Molybdenum (Mo)	2024/03/26		90	%
			Leached Nickel (Ni)	2024/03/26		86	%
			Leached Lead (Pb)	2024/03/26		99	%
			Leached Selenium (Se)	2024/03/26		91	%
			Leached Uranium (U)	2024/03/26		90	%
			Leached Zinc (Zn)	2024/03/26		87	%
2506849	ST5	Method Blank	Leached Silver (Ag)	2024/03/26	<0.30		ug/L
			Leached Arsenic (As)	2024/03/26	<2.0		ug/L
			Leached Barium (Ba)	2024/03/26	<5.0		ug/L
			Leached Boron (B)	2024/03/26	<50		ug/L
			Leached Cadmium (Cd)	2024/03/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/26	<10		ug/L
			Leached Copper (Cu)	2024/03/26	<8.5		ug/L
			Leached Tin (Sn)	2024/03/26	<50		ug/L
			Leached Iron (Fe)	2024/03/26	<100		ug/L
			Leached Manganese (Mn)	2024/03/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/26	<10		ug/L
			Leached Nickel (Ni)	2024/03/26	<6.0		ug/L
			Leached Lead (Pb)	2024/03/26	<1.0		ug/L
			Leached Selenium (Se)	2024/03/26	<1.0		ug/L
			Leached Uranium (U)	2024/03/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/26	<5.0		ug/L
2507244	ASR	LEACH. BLANK	Leached Silver (Ag)	2024/03/29	<0.30		ug/L
			Leached Arsenic (As)	2024/03/29	<2.0		ug/L
			Leached Barium (Ba)	2024/03/29	<5.0		ug/L
			Leached Boron (B)	2024/03/29	<50		ug/L
			Leached Cadmium (Cd)	2024/03/29	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/29	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/29	<10		ug/L
			Leached Copper (Cu)	2024/03/29	3.4, RDL=3.0		ug/L
			Leached Tin (Sn)	2024/03/29	<50		ug/L
			Leached Iron (Fe)	2024/03/29	<100		ug/L
			Leached Manganese (Mn)	2024/03/29	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/29	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/29	<10		ug/L
			Leached Nickel (Ni)	2024/03/29	<6.0		ug/L
			Leached Lead (Pb)	2024/03/29	<1.0		ug/L
			Leached Selenium (Se)	2024/03/29	<1.0		ug/L
			Leached Uranium (U)	2024/03/29	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/29	<5.0		ug/L
2507244	ASR	Spiked Blank	Leached Silver (Ag)	2024/03/29		92	%
			Leached Arsenic (As)	2024/03/29		94	%
			Leached Barium (Ba)	2024/03/29		94	%
			Leached Boron (B)	2024/03/29		89	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Cadmium (Cd)	2024/03/29		94	%
			Leached Chromium (Cr)	2024/03/29		91	%
			Leached Cobalt (Co)	2024/03/29		90	%
			Leached Copper (Cu)	2024/03/29		95	%
			Leached Tin (Sn)	2024/03/29		96	%
			Leached Iron (Fe)	2024/03/29		94	%
			Leached Manganese (Mn)	2024/03/29		93	%
			Leached Mercury (Hg)	2024/03/29		91	%
			Leached Molybdenum (Mo)	2024/03/29		92	%
			Leached Nickel (Ni)	2024/03/29		89	%
			Leached Lead (Pb)	2024/03/29		94	%
			Leached Selenium (Se)	2024/03/29		91	%
			Leached Uranium (U)	2024/03/29		94	%
			Leached Zinc (Zn)	2024/03/29		89	%
2507244	ASR	Method Blank	Leached Silver (Ag)	2024/03/29	<0.30		ug/L
			Leached Arsenic (As)	2024/03/29	<2.0		ug/L
			Leached Barium (Ba)	2024/03/29	<5.0		ug/L
			Leached Boron (B)	2024/03/29	<50		ug/L
			Leached Cadmium (Cd)	2024/03/29	<1.0		ug/L
			Leached Chromium (Cr)	2024/03/29	<7.0		ug/L
			Leached Cobalt (Co)	2024/03/29	<10		ug/L
			Leached Copper (Cu)	2024/03/29	4.6, RDL=3.0		ug/L
			Leached Tin (Sn)	2024/03/29	<50		ug/L
			Leached Iron (Fe)	2024/03/29	<100		ug/L
			Leached Manganese (Mn)	2024/03/29	<3.0		ug/L
			Leached Mercury (Hg)	2024/03/29	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/03/29	<10		ug/L
			Leached Nickel (Ni)	2024/03/29	<6.0		ug/L
			Leached Lead (Pb)	2024/03/29	<1.0		ug/L
			Leached Selenium (Se)	2024/03/29	<1.0		ug/L
			Leached Uranium (U)	2024/03/29	<0.60		ug/L
			Leached Zinc (Zn)	2024/03/29	<5.0		ug/L
2507611	BAG	Spiked Blank	Fluoride (F)	2024/03/28		99	%
2507611	BAG	Method Blank	Fluoride (F)	2024/03/28	<1.0		mg/kg
2507675	CBO	Spiked Blank	Total Extractable Silver (Ag)	2024/03/29		90	%
			Total Extractable Arsenic (As)	2024/03/29		94	%
			Total Extractable Barium (Ba)	2024/03/29		93	%
			Total Extractable Boron (B)	2024/03/29		90	%
			Total Extractable Cadmium (Cd)	2024/03/29		89	%
			Total Extractable Chromium (Cr)	2024/03/29		91	%
			Total Extractable Copper (Cu)	2024/03/29		90	%
			Total Extractable Cobalt (Co)	2024/03/29		94	%
			Total Extractable Tin (Sn)	2024/03/29		94	%
			Total Extractable Iron (Fe)	2024/03/29		95	%
			Total Extractable Manganese (Mn)	2024/03/29		90	%
			Total Extractable Molybdenum (Mo)	2024/03/29		88	%
			Total Extractable Nickel (Ni)	2024/03/29		89	%
			Total Extractable Mercury (Hg)	2024/03/29		93	%
			Total Extractable Lead (Pb)	2024/03/29		96	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Selenium (Se)	2024/03/29		91	%
			Total Extractable Uranium (U)	2024/03/29		98	%
			Total Extractable Zinc (Zn)	2024/03/29		90	%
2507675	CBO	Method Blank	Total Extractable Silver (Ag)	2024/03/29	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/03/29	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/03/29	<4.0		mg/kg
			Total Extractable Boron (B)	2024/03/29	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/03/29	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/03/29	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/03/29	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/03/29	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/03/29	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/03/29	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/03/29	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/03/29	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/03/29	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/03/29	<0.010		mg/kg
			Total Extractable Lead (Pb)	2024/03/29	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/03/29	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/03/29	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/03/29	<5.0		mg/kg
2507726	TEX	QC Standard	Sulfur (S)	2024/03/29		105	%
2507726	TEX	Method Blank	Sulfur (S)	2024/03/29	<0.010		% g/g
2508010	GXL	Spiked Blank	Nitrates (N-NO3-)	2024/04/01		99	%
			Nitrites (N-NO2-)	2024/04/01		98	%
2508010	GXL	Method Blank	Nitrates (N-NO3-)	2024/04/01	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/04/01	<0.20		mg/kg
2508138	LTA	LEACH. BLANK	Leached Fluoride (F)	2024/04/02	<1.0		mg/L
2508138	LTA	Spiked Blank	Leached Fluoride (F)	2024/04/02		96	%
2508141	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/04/02	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/04/02	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/04/02	<0.20		mg/L
2508141	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/04/02		99	%
			Leached Nitrates (N-NO3-)	2024/04/02		98	%
			Leached Nitrate (N) and Nitrite(N)	2024/04/02		98	%
2508578	ASR	LEACH. BLANK	Leached Silver (Ag)	2024/04/05	<0.30		ug/L
			Leached Arsenic (As)	2024/04/05	<2.0		ug/L
			Leached Barium (Ba)	2024/04/05	<5.0		ug/L
			Leached Boron (B)	2024/04/05	<50		ug/L
			Leached Cadmium (Cd)	2024/04/05	<1.0		ug/L
			Leached Chromium (Cr)	2024/04/05	<7.0		ug/L
			Leached Cobalt (Co)	2024/04/05	<10		ug/L
			Leached Copper (Cu)	2024/04/05	<3.0		ug/L
			Leached Tin (Sn)	2024/04/05	<50		ug/L
			Leached Iron (Fe)	2024/04/05	<100		ug/L
			Leached Manganese (Mn)	2024/04/05	<3.0		ug/L
			Leached Mercury (Hg)	2024/04/05	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/04/05	<10		ug/L
			Leached Nickel (Ni)	2024/04/05	<6.0		ug/L
			Leached Lead (Pb)	2024/04/05	<1.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Selenium (Se)	2024/04/05	<1.0		ug/L
			Leached Uranium (U)	2024/04/05	<0.60		ug/L
			Leached Zinc (Zn)	2024/04/05	<5.0		ug/L
2508578	ASR	Spiked Blank	Leached Silver (Ag)	2024/04/05		95	%
			Leached Arsenic (As)	2024/04/05		99	%
			Leached Barium (Ba)	2024/04/05		100	%
			Leached Boron (B)	2024/04/05		104	%
			Leached Cadmium (Cd)	2024/04/05		97	%
			Leached Chromium (Cr)	2024/04/05		95	%
			Leached Cobalt (Co)	2024/04/05		95	%
			Leached Copper (Cu)	2024/04/05		93	%
			Leached Tin (Sn)	2024/04/05		102	%
			Leached Iron (Fe)	2024/04/05		101	%
			Leached Manganese (Mn)	2024/04/05		99	%
			Leached Mercury (Hg)	2024/04/05		94	%
			Leached Molybdenum (Mo)	2024/04/05		94	%
			Leached Nickel (Ni)	2024/04/05		95	%
			Leached Lead (Pb)	2024/04/05		98	%
			Leached Selenium (Se)	2024/04/05		102	%
			Leached Uranium (U)	2024/04/05		97	%
			Leached Zinc (Zn)	2024/04/05		95	%
2508578	ASR	Method Blank	Leached Silver (Ag)	2024/04/05	<0.30		ug/L
			Leached Arsenic (As)	2024/04/05	<2.0		ug/L
			Leached Barium (Ba)	2024/04/05	<5.0		ug/L
			Leached Boron (B)	2024/04/05	<50		ug/L
			Leached Cadmium (Cd)	2024/04/05	<1.0		ug/L
			Leached Chromium (Cr)	2024/04/05	<7.0		ug/L
			Leached Cobalt (Co)	2024/04/05	<10		ug/L
			Leached Copper (Cu)	2024/04/05	<3.0		ug/L
			Leached Tin (Sn)	2024/04/05	<50		ug/L
			Leached Iron (Fe)	2024/04/05	<100		ug/L
			Leached Manganese (Mn)	2024/04/05	<3.0		ug/L
			Leached Mercury (Hg)	2024/04/05	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/04/05	<10		ug/L
			Leached Nickel (Ni)	2024/04/05	<6.0		ug/L
			Leached Lead (Pb)	2024/04/05	<1.0		ug/L
			Leached Selenium (Se)	2024/04/05	<1.0		ug/L
			Leached Uranium (U)	2024/04/05	<0.60		ug/L
			Leached Zinc (Zn)	2024/04/05	<5.0		ug/L

RDL = Reportable Detection Limit

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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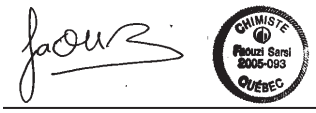
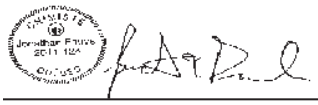
VALIDATION SIGNATURE PAGE

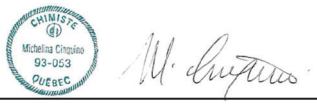
The analytical data and all QC contained in this report were reviewed and validated by:



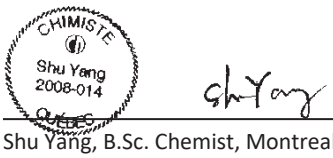
Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst



Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist



Michelina Cinquino, Analyst II



Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Submitted By:	Notification List
Receiving Lab:	Maxxam - Burnaby, BC
Received:	April 15, 2024
Analysis Start:	April 17, 2024
Report Date:	April 17, 2024
Page:	1 of 2

CERTIFICATE OF ANALYSIS VAN24000793.1

CLIENT JOB INFORMATION

Project:	C422121
Shipment ID:	
P.O. Number	C422121
Number of Samples:	2

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	26	Sorting, labeling and boxing samples received as pulps		Order Cancella	VAN
TC000-S	2	Total S Analysis by Leco	0.1	Completed	VAN

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Bureau Veritas Canada (2019) Inc.
4606 Canada Way
Burnaby British Columbia V5G 1K5
Canada

CC: Email Distribution List

JAMES GUO
Geochemistry Digestion Supervisor

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C422121
Report Date: April 17, 2024

CERTIFICATE OF ANALYSIS VAN24000793.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
CLL868-MU5584-TSMC-104343-GD	Pulp		<0.02
CLL869-MU5588-TSMC-104344-GD	Pulp		<0.02

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PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C422121

Report Date: April 17, 2024

QUALITY CONTROL REPORT VAN24000793.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
Reference Materials			
STD GS311-1	Standard		2.48
STD GS910-4	Standard		8.21
STD GS311-1 Expected			2.35
STD GS910-4 Expected			8.27
BLK	Blank		<0.02

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

Your P.O. #: 3000001617
Your Project #: C429230
Site Location: Goodwood
Your C.O.C. #: 127037

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015675
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C417919
Received: 2024/04/18, 10:00

Sample Matrix: Rock
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	1	N/A	N/A		
Fluoride (free) in soils	1	2024/04/23	2024/04/23	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	1	N/A	2024/04/26	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	1	N/A	2024/04/29	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	1	N/A	2024/05/07	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	1	2024/04/29	2024/05/06	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	1	2024/04/24	2024/04/25	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	1	2024/04/22	2024/04/23	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	2	2024/04/26	2024/04/26	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	1	2024/05/08	2024/05/08	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Nitrates (NO3-),Nitrites (NO2-) leached	1	N/A	2024/04/26	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	1	N/A	2024/04/28	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	1	N/A	2024/05/07	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	1	2024/04/23	2024/04/23	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	1	N/A	2024/04/23	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	1	2024/04/24	2024/04/25	STL SOP-00024	MA100-Lixcom1.1 R1 m

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	3	N/A	N/A		
Fluoride (free) in soils	1	2024/04/23	2024/04/23	STL SOP-00038	MA. 300-F 1.2m
Fluoride (free) in soils	2	2024/04/23	2024/04/24	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	3	N/A	2024/04/26	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	3	N/A	2024/04/29	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	3	N/A	2024/05/07	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	3	2024/04/29	2024/05/06	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	3	2024/04/24	2024/04/25	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	3	2024/04/22	2024/04/23	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	6	2024/04/26	2024/04/26	STL SOP-00062	MA.200–Mét. 1.2 R7 m

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Your P.O. #: 3000001617
Your Project #: C429230
Site Location: Goodwood
Your C.O.C. #: 127037

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015675
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C417919
Received: 2024/04/18, 10:00

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Metals - Leached	3	2024/05/08	2024/05/08	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Nitrates (NO3-),Nitrites (NO2-) leached	3	N/A	2024/04/26	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	3	N/A	2024/04/28	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	3	N/A	2024/05/07	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	3	2024/04/23	2024/04/23	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	3	N/A	2024/04/23	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	3	2024/04/24	2024/04/25	STL SOP-00024	MA100-Lixcom1.1 R1 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

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Your P.O. #: 3000001617
Your Project #: C429230
Site Location: Goodwood
Your C.O.C. #: 127037

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015675
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C417919
Received: 2024/04/18, 10:00

Encryption Key

Cloe Christine
Project Manager
24 Jan 2025 14:30:37

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

TOTAL EXTRACTABLE METALS (ROCK)

Bureau Veritas ID		MW5221		
Sampling Date		2024/04/05		
COC Number		127037		
	Units	TSMC-104827-GD	RDL	QC Batch
METALS				
Total Extractable Silver (Ag)	mg/kg	<0.50	0.50	2513273
Total Extractable Arsenic (As)	mg/kg	3.4	2.0	2513273
Total Extractable Barium (Ba)	mg/kg	27	4.0	2513273
Total Extractable Boron (B)	mg/kg	<2.0	2.0	2513273
Total Extractable Cadmium (Cd)	mg/kg	<0.10	0.10	2513273
Total Extractable Chromium (Cr)	mg/kg	2.5	1.0	2513273
Total Extractable Copper (Cu)	mg/kg	2.9	1.0	2513273
Total Extractable Cobalt (Co)	mg/kg	4.6	1.0	2513273
Total Extractable Tin (Sn)	mg/kg	<1.0	1.0	2513273
Total Extractable Iron (Fe) †	mg/kg	110000	100	2513273
Total Extractable Manganese (Mn)	mg/kg	4200	2.0	2513273
Total Extractable Molybdenum (Mo)	mg/kg	<0.50	0.50	2513273
Total Extractable Nickel (Ni)	mg/kg	1.2	0.50	2513273
Total Extractable Mercury (Hg)	mg/kg	0.038	0.010	2513273
Total Extractable Lead (Pb)	mg/kg	<1.0	1.0	2513273
Total Extractable Selenium (Se)	mg/kg	<0.50	0.50	2513273
Total Extractable Uranium (U) †	mg/kg	<2.0	2.0	2513273
Total Extractable Zinc (Zn)	mg/kg	<5.0	5.0	2513273

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		MW5222		MW5223		MW5224		
Sampling Date		2024/04/05		2024/04/05		2024/04/05		
COC Number		127037		127037		127037		
	Units	TSMC-104827-GD	QC Batch	TSMC-104827-GD	QC Batch	TSMC-104827-GD	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2514836	<0.30	2514840	<0.30	0.30	2518372
Leached Arsenic (As)	ug/L	<2.0	2514836	<2.0	2514840	<2.0	2.0	2518372
Leached Barium (Ba)	ug/L	<5.0	2514836	<5.0	2514840	<5.0	5.0	2518372
Leached Boron (B)	ug/L	69	2514836	<50	2514840	<50	50	2518372
Leached Cadmium (Cd)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Chromium (Cr)	ug/L	<7.0	2514836	<7.0	2514840	<7.0	7.0	2518372
Leached Cobalt (Co)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Copper (Cu)	ug/L	<3.0	2514836	<3.0	2514840	<3.0	3.0	2518372
Leached Tin (Sn) †	ug/L	<50	2514836	<50	2514840	<50	50	2518372
Leached Iron (Fe)	ug/L	190	2514836	<100	2514840	<100	100	2518372
Leached Manganese (Mn)	ug/L	140	2514836	8.8	2514840	<3.0	3.0	2518372
Leached Mercury (Hg)	ug/L	<0.50	2514836	<0.50	2514840	<0.50	0.50	2518372
Leached Molybdenum (Mo)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Nickel (Ni)	ug/L	<6.0	2514836	<6.0	2514840	<6.0	6.0	2518372
Leached Lead (Pb)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Selenium (Se)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Uranium (U)	ug/L	<0.60	2514836	<0.60	2514840	<0.60	0.60	2518372
Leached Zinc (Zn)	ug/L	<5.0	2514836	<5.0	2514840	<5.0	5.0	2518372

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

CONVENTIONAL PARAMETERS (ROCK)

Bureau Veritas ID		MW5221		
Sampling Date		2024/04/05		
COC Number		127037		
	Units	TSMC-104827-GD	RDL	QC Batch
CONVENTIONALS				
Fluoride (F)	mg/kg	<1.0	1.0	2513662
Sulfur (S)	% g/g	0.011	0.010	2513908
Nitrates (N-NO3-) †	mg/kg	<1.0	1.0	2513665
Nitrites (N-NO2-) †	mg/kg	<0.20	0.20	2513665

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Bureau Veritas ID		MW5222		MW5223		MW5224		
Sampling Date		2024/04/05		2024/04/05		2024/04/05		
COC Number		127037		127037		127037		
	Units	**TSMC-104827-GD**	**QC Batch**	**TSMC-104827-GD**	**QC Batch**	**TSMC-104827-GD**	**RDL**	**QC Batch**
CONVENTIONALS								
Leached Fluoride (F)	mg/L	<1.0	2514913	<1.0	2515339	<1.0	1.0	2517568
Leached Nitrites (N-NO2-)	mg/L	<0.20	2514917	<0.20	2515344	<0.20	0.20	2517578
Leached Nitrates (N-NO3-)	mg/L	<0.20	2514917	N/A	N/A	<0.20	0.20	2517578
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2514917	N/A	N/A	<0.20	0.20	2517578

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TCLP-EPA 1311 (ROCK)

Bureau Veritas ID		MW5222	
Sampling Date		2024/04/05	
COC Number		127037	
	Units	TSMC-104827-GD	QC Batch
Leachates			
Weight of sample (g)	n/a	20.0	2514145
pH of pre-test	n/a	<1.68	2514145
pH end of leaching	n/a	4.91	2514145
Volume extracting fluid 1 (ml)	n/a	400	2514145
QC Batch = Quality Control Batch			

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

SPLP-EPA 1312 (ROCK)

Bureau Veritas ID		MW5223	
Sampling Date		2024/04/05	
COC Number		127037	
	Units	TSMC-104827-GD	QC Batch
Leachates			
Weight of sample (g)	n/a	25.1	2514149
Volume of extracting fluid (mL)	n/a	500	2514149
pH after 18 hours leaching	n/a	5.54	2514149
pH of extracting fluid	n/a	4.17	2514149

QC Batch = Quality Control Batch

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WATER LEACHATE-CTEU-9 (ROCK)

Bureau Veritas ID		MW5224	
Sampling Date		2024/04/05	
COC Number		127037	
	Units	TSMC-104827-GD	QC Batch
Leachates			
Weight of sample (g)	n/a	40.0	2515512
pH Deionized water	n/a	6.38	2515512
Date extraction fluid added	n/a	2024/04/29	2515512
Date leaching terminated	n/a	2024/05/06	2515512
Volume of extracting fluid (mL)	n/a	160	2515512
pH after 7 days of leaching	n/a	6.70	2515512
QC Batch = Quality Control Batch			

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

TOTAL EXTRACTABLE METALS (SOIL)

Bureau Veritas ID		MW5229	MW5237		MW5241		
Sampling Date		2024/04/09	2024/04/15		2024/04/15		
COC Number		127037	127037		127037		
	Units	TSMC-104963-GD	TSMC-120173-GD	RDL	TSMC-120174-GD	RDL	QC Batch
% MOISTURE	%	7.0	14	N/A	13	N/A	N/A
METALS							
Total Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	<0.50	0.50	2513273
Total Extractable Arsenic (As)	mg/kg	2.1	3.2	2.0	2.9	2.0	2513273
Total Extractable Barium (Ba)	mg/kg	<4.0	<4.0	4.0	<4.0	4.0	2513273
Total Extractable Boron (B)	mg/kg	<2.0	2.7	2.0	<2.0	2.0	2513273
Total Extractable Cadmium (Cd)	mg/kg	<0.10	<0.10	0.10	<0.10	0.10	2513273
Total Extractable Chromium (Cr)	mg/kg	1.3	<1.0	1.0	1.0	1.0	2513273
Total Extractable Copper (Cu)	mg/kg	6.9	3.5	1.0	3.4	1.0	2513273
Total Extractable Cobalt (Co)	mg/kg	7.2	3.8	1.0	3.5	1.0	2513273
Total Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	<1.0	1.0	2513273
Total Extractable Iron (Fe) †	mg/kg	100000	110000	100	80000	10	2513273
Total Extractable Manganese (Mn)	mg/kg	330	390	2.0	370	2.0	2513273
Total Extractable Molybdenum (Mo)	mg/kg	<0.50	<0.50	0.50	<0.50	0.50	2513273
Total Extractable Nickel (Ni)	mg/kg	1.2	1.1	0.50	0.91	0.50	2513273
Total Extractable Mercury (Hg)	mg/kg	0.031	0.022	0.010	<0.010	0.010	2513273
Total Extractable Lead (Pb)	mg/kg	1.3	2.3	1.0	<1.0	1.0	2513273
Total Extractable Selenium (Se)	mg/kg	<0.50	<0.50	0.50	<0.50	0.50	2513273
Total Extractable Uranium (U) †	mg/kg	<2.0	<2.0	2.0	<2.0	2.0	2513273
Total Extractable Zinc (Zn)	mg/kg	5.3	<5.0	5.0	<5.0	5.0	2513273

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MW5230		MW5231		MW5232		
Sampling Date		2024/04/09		2024/04/09		2024/04/09		
COC Number		127037		127037		127037		
	Units	TSMC-104963-GD	QC Batch	TSMC-104963-GD	QC Batch	TSMC-104963-GD	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2514836	<0.30	2514840	<0.30	0.30	2518372
Leached Arsenic (As)	ug/L	<2.0	2514836	<2.0	2514840	<2.0	2.0	2518372
Leached Barium (Ba)	ug/L	8.3	2514836	<5.0	2514840	8.8	5.0	2518372
Leached Boron (B)	ug/L	<50	2514836	<50	2514840	<50	50	2518372
Leached Cadmium (Cd)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Chromium (Cr)	ug/L	<7.0	2514836	<7.0	2514840	<7.0	7.0	2518372
Leached Cobalt (Co)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Copper (Cu)	ug/L	<3.0	2514836	<3.0	2514840	<3.0	3.0	2518372
Leached Tin (Sn) †	ug/L	<50	2514836	<50	2514840	<50	50	2518372
Leached Iron (Fe)	ug/L	430	2514836	<100	2514840	<100	100	2518372
Leached Manganese (Mn)	ug/L	86	2514836	18	2514840	240	3.0	2518372
Leached Mercury (Hg)	ug/L	<0.50	2514836	<0.50	2514840	<0.50	0.50	2518372
Leached Molybdenum (Mo)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Nickel (Ni)	ug/L	<6.0	2514836	<6.0	2514840	<6.0	6.0	2518372
Leached Lead (Pb)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Selenium (Se)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Uranium (U)	ug/L	<0.60	2514836	<0.60	2514840	<0.60	0.60	2518372
Leached Zinc (Zn)	ug/L	<5.0	2514836	<5.0	2514840	<5.0	5.0	2518372

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MW5238		MW5239		MW5240		
Sampling Date		2024/04/15		2024/04/15		2024/04/15		
COC Number		127037		127037		127037		
	Units	TSMC-120173-GD	QC Batch	TSMC-120173-GD	QC Batch	TSMC-120173-GD	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2514836	<0.30	2514840	<0.30	0.30	2518372
Leached Arsenic (As)	ug/L	<2.0	2514836	<2.0	2514840	<2.0	2.0	2518372
Leached Barium (Ba)	ug/L	5.5	2514836	<5.0	2514840	<5.0	5.0	2518372
Leached Boron (B)	ug/L	<50	2514836	<50	2514840	<50	50	2518372
Leached Cadmium (Cd)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Chromium (Cr)	ug/L	<7.0	2514836	<7.0	2514840	<7.0	7.0	2518372
Leached Cobalt (Co)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Copper (Cu)	ug/L	<3.0	2514836	<3.0	2514840	6.6	3.0	2518372
Leached Tin (Sn) †	ug/L	<50	2514836	<50	2514840	<50	50	2518372
Leached Iron (Fe)	ug/L	150	2514836	<100	2514840	<100	100	2518372
Leached Manganese (Mn)	ug/L	91	2514836	28	2514840	16	3.0	2518372
Leached Mercury (Hg)	ug/L	<0.50	2514836	<0.50	2514840	<0.50	0.50	2518372
Leached Molybdenum (Mo)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Nickel (Ni)	ug/L	<6.0	2514836	<6.0	2514840	<6.0	6.0	2518372
Leached Lead (Pb)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Selenium (Se)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Uranium (U)	ug/L	<0.60	2514836	<0.60	2514840	<0.60	0.60	2518372
Leached Zinc (Zn)	ug/L	<5.0	2514836	<5.0	2514840	<5.0	5.0	2518372

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MW5242		MW5243		MW5244		
Sampling Date		2024/04/15		2024/04/15		2024/04/15		
COC Number		127037		127037		127037		
	Units	TSMC-120174-GD	QC Batch	TSMC-120174-GD	QC Batch	TSMC-120174-GD	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2514836	<0.30	2514840	<0.30	0.30	2518372
Leached Arsenic (As)	ug/L	<2.0	2514836	<2.0	2514840	<2.0	2.0	2518372
Leached Barium (Ba)	ug/L	7.1	2514836	<5.0	2514840	<5.0	5.0	2518372
Leached Boron (B)	ug/L	<50	2514836	<50	2514840	73	50	2518372
Leached Cadmium (Cd)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Chromium (Cr)	ug/L	<7.0	2514836	<7.0	2514840	<7.0	7.0	2518372
Leached Cobalt (Co)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Copper (Cu)	ug/L	<3.0	2514836	<3.0	2514840	<3.0	3.0	2518372
Leached Tin (Sn) †	ug/L	<50	2514836	<50	2514840	<50	50	2518372
Leached Iron (Fe)	ug/L	760	2514836	<100	2514840	<100	100	2518372
Leached Manganese (Mn)	ug/L	120	2514836	21	2514840	17	3.0	2518372
Leached Mercury (Hg)	ug/L	<0.50	2514836	<0.50	2514840	<0.50	0.50	2518372
Leached Molybdenum (Mo)	ug/L	<10	2514836	<10	2514840	<10	10	2518372
Leached Nickel (Ni)	ug/L	<6.0	2514836	<6.0	2514840	<6.0	6.0	2518372
Leached Lead (Pb)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Selenium (Se)	ug/L	<1.0	2514836	<1.0	2514840	<1.0	1.0	2518372
Leached Uranium (U)	ug/L	<0.60	2514836	<0.60	2514840	<0.60	0.60	2518372
Leached Zinc (Zn)	ug/L	<5.0	2514836	<5.0	2514840	<5.0	5.0	2518372

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

CONVENTIONAL PARAMETERS (SOIL)

Bureau Veritas ID		MW5229	MW5237	MW5241		
Sampling Date		2024/04/09	2024/04/15	2024/04/15		
COC Number		127037	127037	127037		
	Units	TSMC-104963-GD	TSMC-120173-GD	TSMC-120174-GD	RDL	QC Batch
% MOISTURE	%	7.0	14	13	N/A	N/A
CONVENTIONALS						
Fluoride (F)	mg/kg	<1.0	<1.0	<1.0	1.0	2513662
Sulfur (S)	% g/g	0.018	0.011	0.010	0.010	2513908
Nitrates (N-NO3-) †	mg/kg	1.6	3.1	2.1	1.0	2513665
Nitrites (N-NO2-) †	mg/kg	<0.20	0.41	<0.20	0.20	2513665

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MW5230		MW5231		MW5232		
Sampling Date		2024/04/09		2024/04/09		2024/04/09		
COC Number		127037		127037		127037		
	Units	TSMC-104963-GD	QC Batch	TSMC-104963-GD	QC Batch	TSMC-104963-GD	RDL	QC Batch
CONVENTIONALS								
Leached Fluoride (F)	mg/L	<1.0	2514913	<1.0	2515339	<1.0	1.0	2517568
Leached Nitrites (N-NO2-)	mg/L	<0.20	2514917	<0.20	2515344	<0.20	0.20	2517578
Leached Nitrates (N-NO3-)	mg/L	<0.20	2514917	N/A	N/A	0.46	0.20	2517578
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2514917	N/A	N/A	0.46	0.20	2517578

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		MW5238		MW5239		MW5240		
Sampling Date		2024/04/15		2024/04/15		2024/04/15		
COC Number		127037		127037		127037		
	Units	TSMC-120173-GD	QC Batch	TSMC-120173-GD	QC Batch	TSMC-120173-GD	RDL	QC Batch
CONVENTIONALS								
Leached Fluoride (F)	mg/L	<1.0	2514913	<1.0	2515339	<1.0	1.0	2517568
Leached Nitrites (N-NO2-)	mg/L	<0.20	2514917	<0.20	2515344	<0.20	0.20	2517578
Leached Nitrates (N-NO3-)	mg/L	<0.20	2514917	N/A	N/A	0.90	0.20	2517578
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2514917	N/A	N/A	0.90	0.20	2517578

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		MW5242		MW5243		MW5244		
Sampling Date		2024/04/15		2024/04/15		2024/04/15		
COC Number		127037		127037		127037		
	Units	TSMC-120174-GD	QC Batch	TSMC-120174-GD	QC Batch	TSMC-120174-GD	RDL	QC Batch
CONVENTIONALS								
Leached Fluoride (F)	mg/L	<1.0	2514913	<1.0	2515339	<1.0	1.0	2517568
Leached Nitrites (N-NO2-)	mg/L	<0.20	2514917	<0.20	2515344	<0.20	0.20	2517578
Leached Nitrates (N-NO3-)	mg/L	<0.20	2514917	N/A	N/A	0.53	0.20	2517578
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2514917	N/A	N/A	0.53	0.20	2517578

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

TCLP-EPA 1311 (SOIL)

Bureau Veritas ID		MW5230	MW5238	MW5242	
Sampling Date		2024/04/09	2024/04/15	2024/04/15	
COC Number		127037	127037	127037	
	Units	TSMC-104963-GD	TSMC-120173-GD	TSMC-120174-GD	QC Batch
Leachates					
Weight of sample (g)	n/a	20.1	20.2	20.1	2514145
pH of pre-test	n/a	<1.68	<1.68	<1.68	2514145
pH end of leaching	n/a	4.91	5.97	4.91	2514145
Volume extracting fluid 1 (ml)	n/a	400	400	400	2514145
QC Batch = Quality Control Batch					

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TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

SPLP-EPA 1312 (SOIL)

Bureau Veritas ID		MW5231	MW5239	MW5243	
Sampling Date		2024/04/09	2024/04/15	2024/04/15	
COC Number		127037	127037	127037	
	Units	TSMC-104963-GD	TSMC-120173-GD	TSMC-120174-GD	QC Batch
Leachates					
Weight of sample (g)	n/a	25.0	25.2	25.1	2514149
Volume of extracting fluid (mL)	n/a	500	500	500	2514149
pH after 18 hours leaching	n/a	5.36	5.16	5.34	2514149
pH of extracting fluid	n/a	4.17	4.17	4.17	2514149

QC Batch = Quality Control Batch

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WATER LEACHATE-CTEU-9 (SOIL)

Bureau Veritas ID		MW5232	MW5240	MW5244	
Sampling Date		2024/04/09	2024/04/15	2024/04/15	
COC Number		127037	127037	127037	
	Units	TSMC-104963-GD	TSMC-120173-GD	TSMC-120174-GD	QC Batch
Leachates					
Weight of sample (g)	n/a	40.1	40.0	40.1	2515512
pH Deionized water	n/a	6.38	6.38	6.38	2515512
Date extraction fluid added	n/a	2024/04/29	2024/04/29	2024/04/29	2515512
Date leaching terminated	n/a	2024/05/06	2024/05/06	2024/05/06	2515512
Volume of extracting fluid (mL)	n/a	160	160	160	2515512
pH after 7 days of leaching	n/a	6.72	6.84	6.80	2515512
QC Batch = Quality Control Batch					

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GENERAL COMMENTS

Revised report: As per client request received by e-mail on January 15, 2025, Hg has been added to the parameters reported.

TOTAL EXTRACTABLE METALS (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (ROCK)

pH du pré-test: Veuillez noter que le résultat de l'échantillon MW5222 est en dehors de la courbe de calibration (pH 4 - 10), et aussi dehors des limites de la linéarité (pH 1.68 - 13.0).

TOTAL EXTRACTABLE METALS (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (SOIL)

pH du pré-test: Veuillez noter que le résultat des échantillons MW5242, MW5230 et MW5238 sont en dehors de la courbe de calibration (pH 4 - 10), et aussi dehors des limites de la linéarité (pH 1.68 - 13.0).

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2513273	WWO	Spiked Blank	Total Extractable Silver (Ag)	2024/04/23		97	%
			Total Extractable Arsenic (As)	2024/04/23		98	%
			Total Extractable Barium (Ba)	2024/04/23		95	%
			Total Extractable Boron (B)	2024/04/23		102	%
			Total Extractable Cadmium (Cd)	2024/04/23		92	%
			Total Extractable Chromium (Cr)	2024/04/23		89	%
			Total Extractable Copper (Cu)	2024/04/23		91	%
			Total Extractable Cobalt (Co)	2024/04/23		90	%
			Total Extractable Tin (Sn)	2024/04/23		97	%
			Total Extractable Iron (Fe)	2024/04/23		93	%
			Total Extractable Manganese (Mn)	2024/04/23		94	%
			Total Extractable Molybdenum (Mo)	2024/04/23		91	%
			Total Extractable Nickel (Ni)	2024/04/23		92	%
			Total Extractable Mercury (Hg)	2024/04/23		93	%
			Total Extractable Lead (Pb)	2024/04/23		97	%
			Total Extractable Selenium (Se)	2024/04/23		97	%
			Total Extractable Uranium (U)	2024/04/23		99	%
			Total Extractable Zinc (Zn)	2024/04/23		91	%
2513273	WWO	Method Blank	Total Extractable Silver (Ag)	2024/04/23	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/04/23	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/04/23	<4.0		mg/kg
			Total Extractable Boron (B)	2024/04/23	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/04/23	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/04/23	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/04/23	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/04/23	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/04/23	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/04/23	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/04/23	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/04/23	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/04/23	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/04/23	<0.010		mg/kg
			Total Extractable Lead (Pb)	2024/04/23	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/04/23	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/04/23	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/04/23	<5.0		mg/kg
2513662	ZLI	Spiked Blank	Fluoride (F)	2024/04/23		100	%
2513662	ZLI	Method Blank	Fluoride (F)	2024/04/23	<1.0		mg/kg
2513665	ZZH	Spiked Blank	Nitrates (N-NO3-)	2024/04/23		107	%
			Nitrites (N-NO2-)	2024/04/23		107	%
2513665	ZZH	Method Blank	Nitrates (N-NO3-)	2024/04/23	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/04/23	<0.20		mg/kg
2513908	ZLI	QC Standard	Sulfur (S)	2024/04/23		101	%
2513908	ZLI	Method Blank	Sulfur (S)	2024/04/23	<0.010		% g/g
2514145	HK3	Method Blank	pH end of leaching	2024/04/25	4.92/2.91		n/a
			Volume extracting fluid 1 (ml)	2024/04/25	400		n/a
2514149	HK3	Method Blank	Volume of extracting fluid (mL)	2024/04/25	500		n/a
			pH after 18 hours leaching	2024/04/25	4.18		n/a
			pH of extracting fluid	2024/04/25	4.17		n/a
2514836	ANB	LEACH. BLANK	Leached Silver (Ag)	2024/04/26	<0.30		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Arsenic (As)	2024/04/26	<2.0		ug/L
			Leached Barium (Ba)	2024/04/26	<5.0		ug/L
			Leached Boron (B)	2024/04/26	<50		ug/L
			Leached Cadmium (Cd)	2024/04/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/04/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/04/26	<10		ug/L
			Leached Copper (Cu)	2024/04/26	4.8, RDL=3.0		ug/L
			Leached Tin (Sn)	2024/04/26	<50		ug/L
			Leached Iron (Fe)	2024/04/26	<100		ug/L
			Leached Manganese (Mn)	2024/04/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/04/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/04/26	<10		ug/L
			Leached Nickel (Ni)	2024/04/26	<6.0		ug/L
			Leached Lead (Pb)	2024/04/26	<1.0		ug/L
			Leached Selenium (Se)	2024/04/26	<1.0		ug/L
			Leached Uranium (U)	2024/04/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/04/26	<5.0		ug/L
2514836	ANB	Spiked Blank	Leached Silver (Ag)	2024/04/26		98	%
			Leached Arsenic (As)	2024/04/26		97	%
			Leached Barium (Ba)	2024/04/26		96	%
			Leached Boron (B)	2024/04/26		83	%
			Leached Cadmium (Cd)	2024/04/26		97	%
			Leached Chromium (Cr)	2024/04/26		94	%
			Leached Cobalt (Co)	2024/04/26		92	%
			Leached Copper (Cu)	2024/04/26		91	%
			Leached Tin (Sn)	2024/04/26		96	%
			Leached Iron (Fe)	2024/04/26		96	%
			Leached Manganese (Mn)	2024/04/26		97	%
			Leached Mercury (Hg)	2024/04/26		93	%
			Leached Molybdenum (Mo)	2024/04/26		97	%
			Leached Nickel (Ni)	2024/04/26		90	%
			Leached Lead (Pb)	2024/04/26		96	%
			Leached Selenium (Se)	2024/04/26		100	%
			Leached Uranium (U)	2024/04/26		95	%
			Leached Zinc (Zn)	2024/04/26		91	%
2514836	ANB	Method Blank	Leached Silver (Ag)	2024/04/26	<0.30		ug/L
			Leached Arsenic (As)	2024/04/26	<2.0		ug/L
			Leached Barium (Ba)	2024/04/26	<5.0		ug/L
			Leached Boron (B)	2024/04/26	<50		ug/L
			Leached Cadmium (Cd)	2024/04/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/04/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/04/26	<10		ug/L
			Leached Copper (Cu)	2024/04/26	<3.0		ug/L
			Leached Tin (Sn)	2024/04/26	<50		ug/L
			Leached Iron (Fe)	2024/04/26	<100		ug/L
			Leached Manganese (Mn)	2024/04/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/04/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/04/26	<10		ug/L
			Leached Nickel (Ni)	2024/04/26	<6.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Lead (Pb)	2024/04/26	<1.0		ug/L
			Leached Selenium (Se)	2024/04/26	<1.0		ug/L
			Leached Uranium (U)	2024/04/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/04/26	<5.0		ug/L
2514840	ANB	LEACH. BLANK	Leached Silver (Ag)	2024/04/26	<0.30		ug/L
			Leached Arsenic (As)	2024/04/26	<2.0		ug/L
			Leached Barium (Ba)	2024/04/26	<5.0		ug/L
			Leached Boron (B)	2024/04/26	<50		ug/L
			Leached Cadmium (Cd)	2024/04/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/04/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/04/26	<10		ug/L
			Leached Copper (Cu)	2024/04/26	<3.0		ug/L
			Leached Tin (Sn)	2024/04/26	<50		ug/L
			Leached Iron (Fe)	2024/04/26	<100		ug/L
			Leached Manganese (Mn)	2024/04/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/04/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/04/26	<10		ug/L
			Leached Nickel (Ni)	2024/04/26	<6.0		ug/L
			Leached Lead (Pb)	2024/04/26	<1.0		ug/L
			Leached Selenium (Se)	2024/04/26	<1.0		ug/L
			Leached Uranium (U)	2024/04/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/04/26	<5.0		ug/L
2514840	ANB	Spiked Blank	Leached Silver (Ag)	2024/04/26		101	%
			Leached Arsenic (As)	2024/04/26		103	%
			Leached Barium (Ba)	2024/04/26		102	%
			Leached Boron (B)	2024/04/26		87	%
			Leached Cadmium (Cd)	2024/04/26		105	%
			Leached Chromium (Cr)	2024/04/26		99	%
			Leached Cobalt (Co)	2024/04/26		100	%
			Leached Copper (Cu)	2024/04/26		98	%
			Leached Tin (Sn)	2024/04/26		99	%
			Leached Iron (Fe)	2024/04/26		102	%
			Leached Manganese (Mn)	2024/04/26		101	%
			Leached Mercury (Hg)	2024/04/26		108	%
			Leached Molybdenum (Mo)	2024/04/26		104	%
			Leached Nickel (Ni)	2024/04/26		98	%
			Leached Lead (Pb)	2024/04/26		101	%
			Leached Selenium (Se)	2024/04/26		99	%
			Leached Uranium (U)	2024/04/26		101	%
			Leached Zinc (Zn)	2024/04/26		96	%
2514840	ANB	Method Blank	Leached Silver (Ag)	2024/04/26	<0.30		ug/L
			Leached Arsenic (As)	2024/04/26	<2.0		ug/L
			Leached Barium (Ba)	2024/04/26	<5.0		ug/L
			Leached Boron (B)	2024/04/26	<50		ug/L
			Leached Cadmium (Cd)	2024/04/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/04/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/04/26	<10		ug/L
			Leached Copper (Cu)	2024/04/26	<3.0		ug/L
			Leached Tin (Sn)	2024/04/26	<50		ug/L
			Leached Iron (Fe)	2024/04/26	<100		ug/L

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Manganese (Mn)	2024/04/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/04/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/04/26	<10		ug/L
			Leached Nickel (Ni)	2024/04/26	<6.0		ug/L
			Leached Lead (Pb)	2024/04/26	<1.0		ug/L
			Leached Selenium (Se)	2024/04/26	<1.0		ug/L
			Leached Uranium (U)	2024/04/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/04/26	<5.0		ug/L
2514913	TEX	LEACH. BLANK	Leached Fluoride (F)	2024/04/26	<1.0		mg/L
2514913	TEX	Spiked Blank	Leached Fluoride (F)	2024/04/26		97	%
2514917	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/04/26	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/04/26	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/04/26	<0.20		mg/L
2514917	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/04/26		96	%
			Leached Nitrates (N-NO3-)	2024/04/26		92	%
			Leached Nitrate (N) and Nitrite(N)	2024/04/26		94	%
2515339	TEX	LEACH. BLANK	Leached Fluoride (F)	2024/04/29	<1.0		mg/L
2515339	TEX	Spiked Blank	Leached Fluoride (F)	2024/04/29		93	%
2515344	ESW	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/04/28	<0.20		mg/L
2515344	ESW	Spiked Blank	Leached Nitrites (N-NO2-)	2024/04/28		101	%
2515512	HK3	Method Blank	pH Deionized water	2024/05/06	6.38		n/a
			Date extraction fluid added	2024/05/06	2024/04/29		n/a
			Date leaching terminated	2024/05/06	2024/05/06		n/a
			Volume of extracting fluid (mL)	2024/05/06	160		n/a
			pH after 7 days of leaching	2024/05/06	7.12		n/a
2517568	LTA	LEACH. BLANK	Leached Fluoride (F)	2024/05/07	<1.0		mg/L
2517568	LTA	Spiked Blank	Leached Fluoride (F)	2024/05/07		97	%
2517578	ESW	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/05/06	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/05/06	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/05/06	<0.20		mg/L
2517578	ESW	Spiked Blank	Leached Nitrites (N-NO2-)	2024/05/07		98	%
			Leached Nitrates (N-NO3-)	2024/05/07		97	%
			Leached Nitrate (N) and Nitrite(N)	2024/05/07		98	%
2518372	ANB	LEACH. BLANK	Leached Silver (Ag)	2024/05/08	<0.30		ug/L
			Leached Arsenic (As)	2024/05/08	<2.0		ug/L
			Leached Barium (Ba)	2024/05/08	<5.0		ug/L
			Leached Boron (B)	2024/05/08	<50		ug/L
			Leached Cadmium (Cd)	2024/05/08	<1.0		ug/L
			Leached Chromium (Cr)	2024/05/08	<7.0		ug/L
			Leached Cobalt (Co)	2024/05/08	<10		ug/L
			Leached Copper (Cu)	2024/05/08	<3.0		ug/L
			Leached Tin (Sn)	2024/05/08	<50		ug/L
			Leached Iron (Fe)	2024/05/08	<100		ug/L
			Leached Manganese (Mn)	2024/05/08	<3.0		ug/L
			Leached Mercury (Hg)	2024/05/08	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/05/08	<10		ug/L
			Leached Nickel (Ni)	2024/05/08	<6.0		ug/L
			Leached Lead (Pb)	2024/05/08	<1.0		ug/L
			Leached Selenium (Se)	2024/05/08	<1.0		ug/L
			Leached Uranium (U)	2024/05/08	<0.60		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Zinc (Zn)	2024/05/08	<5.0		ug/L
2518372	ANB	Spiked Blank	Leached Silver (Ag)	2024/05/08		101	%
			Leached Arsenic (As)	2024/05/08		100	%
			Leached Barium (Ba)	2024/05/08		101	%
			Leached Boron (B)	2024/05/08		97	%
			Leached Cadmium (Cd)	2024/05/08		98	%
			Leached Chromium (Cr)	2024/05/08		98	%
			Leached Cobalt (Co)	2024/05/08		96	%
			Leached Copper (Cu)	2024/05/08		96	%
			Leached Tin (Sn)	2024/05/08		101	%
			Leached Iron (Fe)	2024/05/08		97	%
			Leached Manganese (Mn)	2024/05/08		96	%
			Leached Mercury (Hg)	2024/05/08		95	%
			Leached Molybdenum (Mo)	2024/05/08		99	%
			Leached Nickel (Ni)	2024/05/08		96	%
			Leached Lead (Pb)	2024/05/08		101	%
			Leached Selenium (Se)	2024/05/08		95	%
			Leached Uranium (U)	2024/05/08		99	%
			Leached Zinc (Zn)	2024/05/08		94	%
2518372	ANB	Method Blank	Leached Silver (Ag)	2024/05/08	<0.30		ug/L
			Leached Arsenic (As)	2024/05/08	<2.0		ug/L
			Leached Barium (Ba)	2024/05/08	<5.0		ug/L
			Leached Boron (B)	2024/05/08	<50		ug/L
			Leached Cadmium (Cd)	2024/05/08	<1.0		ug/L
			Leached Chromium (Cr)	2024/05/08	<7.0		ug/L
			Leached Cobalt (Co)	2024/05/08	<10		ug/L
			Leached Copper (Cu)	2024/05/08	<3.0		ug/L
			Leached Tin (Sn)	2024/05/08	<50		ug/L
			Leached Iron (Fe)	2024/05/08	<100		ug/L
			Leached Manganese (Mn)	2024/05/08	<3.0		ug/L
			Leached Mercury (Hg)	2024/05/08	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/05/08	<10		ug/L
			Leached Nickel (Ni)	2024/05/08	<6.0		ug/L
			Leached Lead (Pb)	2024/05/08	<1.0		ug/L
			Leached Selenium (Se)	2024/05/08	<1.0		ug/L
			Leached Uranium (U)	2024/05/08	<0.60		ug/L
			Leached Zinc (Zn)	2024/05/08	<5.0		ug/L

RDL = Reportable Detection Limit

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C417919
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: C429230
Site Location: Goodwood
Your P.O. #: 3000001617
Sampler Initials: NS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cansu Bolukbas
Membre OCQ#2324-095
Cansu Bolukbas, B.Sc., Chemist, Montreal, Analyst II

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Submitted By:	Notification List
Receiving Lab:	Maxxam - Burnaby, BC
Received:	May 08, 2024
Analysis Start:	May 08, 2024
Report Date:	May 24, 2024
Page:	1 of 2

CERTIFICATE OF ANALYSIS VAN24000980.1

CLIENT JOB INFORMATION

Project:	C429230
Shipment ID:	
P.O. Number	*
Number of Samples:	4

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	4	Sorting, labeling and boxing samples received as pulps			VAN
TC000-S	4	Total S Analysis by Leco	0.1	Completed	VAN

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Bureau Veritas Canada (2019) Inc.
4606 Canada Way
Burnaby British Columbia V5G 1K5
Canada

CC: Email Distribution List

CLAIRE HO
Special Projects Coordinator

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C429230
Report Date: May 24, 2024

CERTIFICATE OF ANALYSIS VAN24000980.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
CMQ565-MW5221-TSMC-104827-G	Pulp		<0.02
CMQ566-MW5229-TSMC-104963-G	Pulp		<0.02
CMQ567-MW5237-TSMC-120173-G	Pulp		<0.02
CMQ568-MW5241-TSMC-120174-G	Pulp		<0.02

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Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C429230
Report Date: May 24, 2024

QUALITY CONTROL REPORT VAN24000980.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
Pulp Duplicates			
CMQ567-MW5237-TSMC-120173-GD	Pulp		<0.02
REP	QC		<0.02
Reference Materials			
STD GS311-1	Standard		2.23
STD OREAS279	Standard		1.29
STD OREAS279 Expected			1.27
STD GS311-1 Expected			2.35
BLK	Blank		<0.02

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Your P.O. #: 3000001617
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 131026

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015676
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C424528
Received: 2024/05/21, 10:20

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	2	N/A	N/A		
Fluoride (free) in soils	2	2024/05/25	2024/05/25	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	2	N/A	2024/05/25	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	2	N/A	2024/05/27	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	2	N/A	2024/06/03	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	2	2024/05/24	2024/05/31	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	2	2024/05/23	2024/05/24	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	2	2024/05/24	2024/05/27	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	4	2024/05/25	2024/05/26	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	2	2024/06/01	2024/06/04	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/05/26	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/05/27	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/06/01	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	2	2024/05/25	2024/05/26	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	2	N/A	2024/05/27	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	2	2024/05/23	2024/05/24	STL SOP-00024	MA100-Lixcom1.1 R1 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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Your P.O. #: 3000001617
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 131026

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015676
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C424528
Received: 2024/05/21, 10:20

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
24 Jan 2025 14:31:52

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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TOTAL EXTRACTABLE METALS (SOIL)

Bureau Veritas ID		MZ5917	MZ5918		
Sampling Date		2024/05/03	2024/05/03		
COC Number		131026	131026		
	Units	TSMC-120450-GD	TSMC-120451-GD	RDL	QC Batch
% MOISTURE	%	7.6	7.9	N/A	N/A
METALS					
Total Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	2524238
Total Extractable Arsenic (As)	mg/kg	3.7	4.1	2.0	2524238
Total Extractable Barium (Ba)	mg/kg	15	8.1	4.0	2524238
Total Extractable Boron (B)	mg/kg	4.9	3.8	2.0	2524238
Total Extractable Cadmium (Cd)	mg/kg	<0.10	<0.10	0.10	2524238
Total Extractable Chromium (Cr)	mg/kg	16	7.8	1.0	2524238
Total Extractable Copper (Cu)	mg/kg	5.3	3.1	1.0	2524238
Total Extractable Cobalt (Co)	mg/kg	2.9	2.2	1.0	2524238
Total Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	2524238
Total Extractable Iron (Fe) †	mg/kg	150000	140000	100	2524238
Total Extractable Manganese (Mn)	mg/kg	510	290	2.0	2524238
Total Extractable Molybdenum (Mo)	mg/kg	<0.50	<0.50	0.50	2524238
Total Extractable Nickel (Ni)	mg/kg	4.3	1.6	0.50	2524238
Total Extractable Mercury (Hg)	mg/kg	0.038	0.021	0.010	2524238
Total Extractable Lead (Pb)	mg/kg	7.9	6.3	1.0	2524238
Total Extractable Selenium (Se)	mg/kg	<0.50	<0.50	0.50	2524238
Total Extractable Uranium (U) †	mg/kg	<2.0	<2.0	2.0	2524238
Total Extractable Zinc (Zn)	mg/kg	16	8.2	5.0	2524238

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MZ5928		MZ5929		MZ5930		
Sampling Date		2024/05/03		2024/05/03		2024/05/03		
COC Number		131026		131026		131026		
	Units	TSMC-120450-GD (TCLP)	QC Batch	TSMC-120450-GD (SPLP 1312)	QC Batch	TSMC-120450-GD (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2524620	<0.30	2524617	<0.30	0.30	2527371
Leached Arsenic (As)	ug/L	<2.0	2524620	<2.0	2524617	<2.0	2.0	2527371
Leached Barium (Ba)	ug/L	19	2524620	<5.0	2524617	<5.0	5.0	2527371
Leached Boron (B)	ug/L	<50	2524620	<50	2524617	<50	50	2527371
Leached Cadmium (Cd)	ug/L	<1.0	2524620	<1.0	2524617	<1.0	1.0	2527371
Leached Chromium (Cr)	ug/L	<7.0	2524620	<7.0	2524617	<7.0	7.0	2527371
Leached Cobalt (Co)	ug/L	<10	2524620	<10	2524617	<10	10	2527371
Leached Copper (Cu)	ug/L	<3.0	2524620	<3.0	2524617	<3.0	3.0	2527371
Leached Tin (Sn) †	ug/L	<50	2524620	<50	2524617	<50	50	2527371
Leached Iron (Fe)	ug/L	<100	2524620	<100	2524617	<100	100	2527371
Leached Manganese (Mn)	ug/L	160	2524620	6.1	2524617	62	3.0	2527371
Leached Mercury (Hg)	ug/L	<0.50	2524620	<0.50	2524617	<0.50	0.50	2527371
Leached Molybdenum (Mo)	ug/L	<10	2524620	<10	2524617	<10	10	2527371
Leached Nickel (Ni)	ug/L	<6.0	2524620	<6.0	2524617	<6.0	6.0	2527371
Leached Lead (Pb)	ug/L	<1.0	2524620	<1.0	2524617	<1.0	1.0	2527371
Leached Selenium (Se)	ug/L	<1.0	2524620	<1.0	2524617	<1.0	1.0	2527371
Leached Uranium (U)	ug/L	<0.60	2524620	<0.60	2524617	<0.60	0.60	2527371
Leached Zinc (Zn)	ug/L	<5.0	2524620	<5.0	2524617	<5.0	5.0	2527371

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MZ5941		MZ5942		MZ5943		
Sampling Date		2024/05/03		2024/05/03		2024/05/03		
COC Number		131026		131026		131026		
	Units	TSMC-120451-GD(TCLP)	QC Batch	TSMC-120451-GD (SPLP 1312)	QC Batch	TSMC-120451-GD (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2524620	<0.30	2524617	<0.30	0.30	2527371
Leached Arsenic (As)	ug/L	<2.0	2524620	<2.0	2524617	<2.0	2.0	2527371
Leached Barium (Ba)	ug/L	15	2524620	<5.0	2524617	<5.0	5.0	2527371
Leached Boron (B)	ug/L	<50	2524620	<50	2524617	<50	50	2527371
Leached Cadmium (Cd)	ug/L	<1.0	2524620	<1.0	2524617	<1.0	1.0	2527371
Leached Chromium (Cr)	ug/L	<7.0	2524620	<7.0	2524617	<7.0	7.0	2527371
Leached Cobalt (Co)	ug/L	<10	2524620	<10	2524617	<10	10	2527371
Leached Copper (Cu)	ug/L	<3.0	2524620	<3.0	2524617	<3.0	3.0	2527371
Leached Tin (Sn) †	ug/L	<50	2524620	<50	2524617	<50	50	2527371
Leached Iron (Fe)	ug/L	<100	2524620	<100	2524617	<100	100	2527371
Leached Manganese (Mn)	ug/L	150	2524620	7.7	2524617	160	3.0	2527371
Leached Mercury (Hg)	ug/L	<0.50	2524620	<0.50	2524617	<0.50	0.50	2527371
Leached Molybdenum (Mo)	ug/L	<10	2524620	<10	2524617	<10	10	2527371
Leached Nickel (Ni)	ug/L	<6.0	2524620	<6.0	2524617	<6.0	6.0	2527371
Leached Lead (Pb)	ug/L	<1.0	2524620	<1.0	2524617	<1.0	1.0	2527371
Leached Selenium (Se)	ug/L	<1.0	2524620	<1.0	2524617	<1.0	1.0	2527371
Leached Uranium (U)	ug/L	<0.60	2524620	<0.60	2524617	<0.60	0.60	2527371
Leached Zinc (Zn)	ug/L	<5.0	2524620	<5.0	2524617	<5.0	5.0	2527371

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617

CONVENTIONAL PARAMETERS (SOIL)

Bureau Veritas ID		MZ5917	MZ5918		
Sampling Date		2024/05/03	2024/05/03		
COC Number		131026	131026		
	Units	TSMC-120450-GD	TSMC-120451-GD	RDL	QC Batch
% MOISTURE	%	7.6	7.9	N/A	N/A
CONVENTIONALS					
Fluoride (F)	mg/kg	<1.0	<1.0	1.0	2524616
Sulfur (S)	% g/g	<0.010	<0.010	0.010	2525029
Nitrates (N-NO3-) †	mg/kg	<1.0	<1.0	1.0	2524635
Nitrites (N-NO2-) †	mg/kg	<0.20	<0.20	0.20	2524635

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Bureau Veritas ID		MZ5928		MZ5929		
Sampling Date		2024/05/03		2024/05/03		
COC Number		131026		131026		
	Units	TSMC-120450-GD (TCLP)	QC Batch	TSMC-120450-GD (SPLP 1312)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2524746	<1.0	1.0	2524683
Leached Nitrites (N-NO2-)	mg/L	<0.20	2524749	<0.20	0.20	2524690
Leached Nitrates (N-NO3-)	mg/L	<0.20	2524749	N/A	0.20	N/A
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2524749	N/A	0.20	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		MZ5930		MZ5941		
Sampling Date		2024/05/03		2024/05/03		
COC Number		131026		131026		
	Units	TSMC-120450-GD (CTEU-9)	QC Batch	TSMC-120451-GD(TCLP)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2527241	<1.0	1.0	2524746
Leached Nitrites (N-NO2-)	mg/L	<0.20	2527294	<0.20	0.20	2524749
Leached Nitrates (N-NO3-)	mg/L	<0.20	2527294	<0.20	0.20	2524749
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2527294	<0.20	0.20	2524749

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		MZ5942		MZ5943		
Sampling Date		2024/05/03		2024/05/03		
COC Number		131026		131026		
	Units	TSMC-120451-GD (SPLP 1312)	QC Batch	TSMC-120451-GD (CTEU-9)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2524683	<1.0	1.0	2527241
Leached Nitrites (N-NO2-)	mg/L	<0.20	2524690	<0.20	0.20	2527294
Leached Nitrates (N-NO3-)	mg/L	N/A	N/A	<0.20	0.20	2527294
Leached Nitrate (N) and Nitrite(N)	mg/L	N/A	N/A	<0.20	0.20	2527294

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TCLP-EPA 1311 (SOIL)

Bureau Veritas ID		MZ5928	MZ5941	
Sampling Date		2024/05/03	2024/05/03	
COC Number		131026	131026	
	Units	TSMC-120450-GD (TCLP)	TSMC-120451-GD(TCLP)	QC Batch
Leachates				
Weight of sample (g)	n/a	20.0	20.1	2523559
pH of pre-test	n/a	<1.68	<1.68	2523559
pH end of leaching	n/a	4.92	4.91	2523559
Volume extracting fluid 1 (ml)	n/a	400	400	2523559
QC Batch = Quality Control Batch				

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SPLP-EPA 1312 (SOIL)

Bureau Veritas ID		MZ5929	MZ5942	
Sampling Date		2024/05/03	2024/05/03	
COC Number		131026	131026	
	Units	TSMC-120450-GD (SPLP 1312)	TSMC-120451-GD (SPLP 1312)	QC Batch
Leachates				
Weight of sample (g)	n/a	25.0	25.1	2523622
Volume of extracting fluid (mL)	n/a	500	500	2523622
pH after 18 hours leaching	n/a	6.56	6.21	2523622
pH of extracting fluid	n/a	4.22	4.22	2523622
QC Batch = Quality Control Batch				

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WATER LEACHATE-CTEU-9 (SOIL)

Bureau Veritas ID		MZ5930	MZ5943	
Sampling Date		2024/05/03	2024/05/03	
COC Number		131026	131026	
	Units	TSMC-120450-GD (CTEU-9)	TSMC-120451-GD (CTEU-9)	QC Batch
Leachates				
Weight of sample (g)	n/a	40.1	40.0	2524111
pH Deionized water	n/a	6.99	6.99	2524111
Date extraction fluid added	n/a	2024/05/24	2024/05/24	2524111
Date leaching terminated	n/a	2024/05/31	2024/05/31	2524111
Volume of extracting fluid (mL)	n/a	160	160	2524111
pH after 7 days of leaching	n/a	7.49	7.69	2524111

QC Batch = Quality Control Batch

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GENERAL COMMENTS

Revised report: As per client request received by e-mail on January 15, 2025, Hg has been added to the parameters reported.

TOTAL EXTRACTABLE METALS (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (SOIL)

pH du pré-test: Veuillez noter que le résultat des échantillons MZ5941 et MZ5928 sont en dehors de la courbe de calibration (pH 4 - 10), et aussi dehors des limites de la linéarité (pH 1.68 - 13.0).

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2523559	HK3	Method Blank	pH end of leaching	2024/05/24	4.91/2.90		n/a
			Volume extracting fluid 1 (ml)	2024/05/24	400		n/a
2523622	HK3	Method Blank	Volume of extracting fluid (mL)	2024/05/24	500		n/a
			pH after 18 hours leaching	2024/05/24	4.24		n/a
			pH of extracting fluid	2024/05/24	4.22		n/a
2524111	HK3	Method Blank	pH Deionized water	2024/05/31	6.99		n/a
			Date extraction fluid added	2024/05/31	2024/05/24		n/a
			Date leaching terminated	2024/05/31	2024/05/31		n/a
			Volume of extracting fluid (mL)	2024/05/31	160		n/a
			pH after 7 days of leaching	2024/05/31	6.72		n/a
2524238	ANB	Spiked Blank	Total Extractable Silver (Ag)	2024/05/27		101	%
			Total Extractable Arsenic (As)	2024/05/27		106	%
			Total Extractable Barium (Ba)	2024/05/27		104	%
			Total Extractable Boron (B)	2024/05/27		108	%
			Total Extractable Cadmium (Cd)	2024/05/27		101	%
			Total Extractable Chromium (Cr)	2024/05/27		100	%
			Total Extractable Copper (Cu)	2024/05/27		101	%
			Total Extractable Cobalt (Co)	2024/05/27		104	%
			Total Extractable Tin (Sn)	2024/05/27		103	%
			Total Extractable Iron (Fe)	2024/05/27		102	%
			Total Extractable Manganese (Mn)	2024/05/27		101	%
			Total Extractable Molybdenum (Mo)	2024/05/27		98	%
			Total Extractable Nickel (Ni)	2024/05/27		103	%
			Total Extractable Mercury (Hg)	2024/05/27		107	%
			Total Extractable Lead (Pb)	2024/05/27		103	%
			Total Extractable Selenium (Se)	2024/05/27		103	%
			Total Extractable Uranium (U)	2024/05/27		107	%
			Total Extractable Zinc (Zn)	2024/05/27		102	%
2524238	ANB	Method Blank	Total Extractable Silver (Ag)	2024/05/27	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/05/27	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/05/27	<4.0		mg/kg
			Total Extractable Boron (B)	2024/05/27	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/05/27	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/05/27	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/05/27	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/05/27	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/05/27	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/05/27	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/05/27	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/05/27	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/05/27	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/05/27	<0.010		mg/kg
			Total Extractable Lead (Pb)	2024/05/27	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/05/27	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/05/27	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/05/27	<5.0		mg/kg
2524616	BAG	Spiked Blank	Fluoride (F)	2024/05/25		92	%
2524616	BAG	Method Blank	Fluoride (F)	2024/05/25	<1.0		mg/kg
2524617	CYU	LEACH. BLANK	Leached Silver (Ag)	2024/05/26	<0.30		ug/L
			Leached Arsenic (As)	2024/05/26	<2.0		ug/L
			Leached Barium (Ba)	2024/05/26	<5.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Boron (B)	2024/05/26	<50		ug/L
			Leached Cadmium (Cd)	2024/05/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/05/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/05/26	<10		ug/L
			Leached Copper (Cu)	2024/05/26	<3.0		ug/L
			Leached Tin (Sn)	2024/05/26	<50		ug/L
			Leached Iron (Fe)	2024/05/26	<100		ug/L
			Leached Manganese (Mn)	2024/05/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/05/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/05/26	<10		ug/L
			Leached Nickel (Ni)	2024/05/26	<6.0		ug/L
			Leached Lead (Pb)	2024/05/26	<1.0		ug/L
			Leached Selenium (Se)	2024/05/26	<1.0		ug/L
			Leached Uranium (U)	2024/05/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/05/26	<5.0		ug/L
2524617	CYU	Spiked Blank	Leached Silver (Ag)	2024/05/26		100	%
			Leached Arsenic (As)	2024/05/26		105	%
			Leached Barium (Ba)	2024/05/26		101	%
			Leached Boron (B)	2024/05/26		107	%
			Leached Cadmium (Cd)	2024/05/26		102	%
			Leached Chromium (Cr)	2024/05/26		102	%
			Leached Cobalt (Co)	2024/05/26		100	%
			Leached Copper (Cu)	2024/05/26		99	%
			Leached Tin (Sn)	2024/05/26		114	%
			Leached Iron (Fe)	2024/05/26		101	%
			Leached Manganese (Mn)	2024/05/26		103	%
			Leached Mercury (Hg)	2024/05/26		98	%
			Leached Molybdenum (Mo)	2024/05/26		102	%
			Leached Nickel (Ni)	2024/05/26		99	%
			Leached Lead (Pb)	2024/05/26		102	%
			Leached Selenium (Se)	2024/05/26		111	%
			Leached Uranium (U)	2024/05/26		100	%
			Leached Zinc (Zn)	2024/05/26		106	%
2524617	CYU	Method Blank	Leached Silver (Ag)	2024/05/26	<0.30		ug/L
			Leached Arsenic (As)	2024/05/26	<2.0		ug/L
			Leached Barium (Ba)	2024/05/26	<5.0		ug/L
			Leached Boron (B)	2024/05/26	<50		ug/L
			Leached Cadmium (Cd)	2024/05/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/05/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/05/26	<10		ug/L
			Leached Copper (Cu)	2024/05/26	<3.0		ug/L
			Leached Tin (Sn)	2024/05/26	<50		ug/L
			Leached Iron (Fe)	2024/05/26	<100		ug/L
			Leached Manganese (Mn)	2024/05/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/05/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/05/26	<10		ug/L
			Leached Nickel (Ni)	2024/05/26	<6.0		ug/L
			Leached Lead (Pb)	2024/05/26	<1.0		ug/L
			Leached Selenium (Se)	2024/05/26	<1.0		ug/L
			Leached Uranium (U)	2024/05/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/05/26	<5.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2524620	CYU	LEACH. BLANK	Leached Silver (Ag)	2024/05/26	<0.30		ug/L
			Leached Arsenic (As)	2024/05/26	<2.0		ug/L
			Leached Barium (Ba)	2024/05/26	<5.0		ug/L
			Leached Boron (B)	2024/05/26	<50		ug/L
			Leached Cadmium (Cd)	2024/05/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/05/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/05/26	<10		ug/L
			Leached Copper (Cu)	2024/05/26	<3.0		ug/L
			Leached Tin (Sn)	2024/05/26	<50		ug/L
			Leached Iron (Fe)	2024/05/26	<100		ug/L
			Leached Manganese (Mn)	2024/05/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/05/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/05/26	<10		ug/L
			Leached Nickel (Ni)	2024/05/26	<6.0		ug/L
			Leached Lead (Pb)	2024/05/26	<1.0		ug/L
			Leached Selenium (Se)	2024/05/26	<1.0		ug/L
			Leached Uranium (U)	2024/05/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/05/26	<5.0		ug/L
2524620	CYU	Spiked Blank	Leached Silver (Ag)	2024/05/26		103	%
			Leached Arsenic (As)	2024/05/26		104	%
			Leached Barium (Ba)	2024/05/26		101	%
			Leached Boron (B)	2024/05/26		110	%
			Leached Cadmium (Cd)	2024/05/26		102	%
			Leached Chromium (Cr)	2024/05/26		101	%
			Leached Cobalt (Co)	2024/05/26		100	%
			Leached Copper (Cu)	2024/05/26		99	%
			Leached Tin (Sn)	2024/05/26		110	%
			Leached Iron (Fe)	2024/05/26		101	%
			Leached Manganese (Mn)	2024/05/26		100	%
			Leached Mercury (Hg)	2024/05/26		98	%
			Leached Molybdenum (Mo)	2024/05/26		103	%
			Leached Nickel (Ni)	2024/05/26		99	%
			Leached Lead (Pb)	2024/05/26		101	%
			Leached Selenium (Se)	2024/05/26		109	%
			Leached Uranium (U)	2024/05/26		100	%
			Leached Zinc (Zn)	2024/05/26		100	%
2524620	CYU	Method Blank	Leached Silver (Ag)	2024/05/26	<0.30		ug/L
			Leached Arsenic (As)	2024/05/26	<2.0		ug/L
			Leached Barium (Ba)	2024/05/26	<5.0		ug/L
			Leached Boron (B)	2024/05/26	<50		ug/L
			Leached Cadmium (Cd)	2024/05/26	<1.0		ug/L
			Leached Chromium (Cr)	2024/05/26	<7.0		ug/L
			Leached Cobalt (Co)	2024/05/26	<10		ug/L
			Leached Copper (Cu)	2024/05/26	<3.0		ug/L
			Leached Tin (Sn)	2024/05/26	<50		ug/L
			Leached Iron (Fe)	2024/05/26	<100		ug/L
			Leached Manganese (Mn)	2024/05/26	<3.0		ug/L
			Leached Mercury (Hg)	2024/05/26	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/05/26	<10		ug/L
			Leached Nickel (Ni)	2024/05/26	<6.0		ug/L
			Leached Lead (Pb)	2024/05/26	<1.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Selenium (Se)	2024/05/26	<1.0		ug/L
			Leached Uranium (U)	2024/05/26	<0.60		ug/L
			Leached Zinc (Zn)	2024/05/26	<5.0		ug/L
2524635	ZZH	Spiked Blank	Nitrates (N-NO3-)	2024/05/26		99	%
			Nitrites (N-NO2-)	2024/05/26		97	%
2524635	ZZH	Method Blank	Nitrates (N-NO3-)	2024/05/26	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/05/26	<0.20		mg/kg
2524683	LI	LEACH. BLANK	Leached Fluoride (F)	2024/05/25	<1.0		mg/L
2524683	LI	Spiked Blank	Leached Fluoride (F)	2024/05/25		93	%
2524690	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/05/26	<0.20		mg/L
2524690	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/05/26		103	%
2524746	LI	LEACH. BLANK	Leached Fluoride (F)	2024/05/27	<1.0		mg/L
2524746	LI	Spiked Blank	Leached Fluoride (F)	2024/05/27		96	%
2524749	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/05/27	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/05/27	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/05/27	<0.20		mg/L
2524749	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/05/27		109	%
			Leached Nitrates (N-NO3-)	2024/05/27		104	%
			Leached Nitrate (N) and Nitrite(N)	2024/05/27		107	%
2525029	BAG	QC Standard	Sulfur (S)	2024/05/27		93	%
2525029	BAG	Method Blank	Sulfur (S)	2024/05/27	<0.010		% g/g
2527241	LI	LEACH. BLANK	Leached Fluoride (F)	2024/06/03	<1.0		mg/L
2527241	LI	Spiked Blank	Leached Fluoride (F)	2024/06/03		89	%
2527294	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/06/01	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/06/01	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/06/01	<0.20		mg/L
2527294	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/06/01		102	%
			Leached Nitrates (N-NO3-)	2024/06/01		102	%
			Leached Nitrate (N) and Nitrite(N)	2024/06/01		102	%
2527371	ST5	LEACH. BLANK	Leached Silver (Ag)	2024/06/04	<0.30		ug/L
			Leached Arsenic (As)	2024/06/04	<2.0		ug/L
			Leached Barium (Ba)	2024/06/04	<5.0		ug/L
			Leached Boron (B)	2024/06/04	<50		ug/L
			Leached Cadmium (Cd)	2024/06/04	<1.0		ug/L
			Leached Chromium (Cr)	2024/06/04	<7.0		ug/L
			Leached Cobalt (Co)	2024/06/04	<10		ug/L
			Leached Copper (Cu)	2024/06/04	<3.0		ug/L
			Leached Tin (Sn)	2024/06/04	<50		ug/L
			Leached Iron (Fe)	2024/06/04	<100		ug/L
			Leached Manganese (Mn)	2024/06/04	<3.0		ug/L
			Leached Mercury (Hg)	2024/06/04	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/06/04	<10		ug/L
			Leached Nickel (Ni)	2024/06/04	<6.0		ug/L
			Leached Lead (Pb)	2024/06/04	1.2, RDL=1.0		ug/L
			Leached Selenium (Se)	2024/06/04	<1.0		ug/L
			Leached Uranium (U)	2024/06/04	<0.60		ug/L
			Leached Zinc (Zn)	2024/06/04	<5.0		ug/L
2527371	ST5	Spiked Blank	Leached Silver (Ag)	2024/06/04		104	%
			Leached Arsenic (As)	2024/06/04		104	%
			Leached Barium (Ba)	2024/06/04		105	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Boron (B)	2024/06/04		105	%
			Leached Cadmium (Cd)	2024/06/04		100	%
			Leached Chromium (Cr)	2024/06/04		99	%
			Leached Cobalt (Co)	2024/06/04		97	%
			Leached Copper (Cu)	2024/06/04		97	%
			Leached Tin (Sn)	2024/06/04		104	%
			Leached Iron (Fe)	2024/06/04		101	%
			Leached Manganese (Mn)	2024/06/04		102	%
			Leached Mercury (Hg)	2024/06/04		99	%
			Leached Molybdenum (Mo)	2024/06/04		103	%
			Leached Nickel (Ni)	2024/06/04		96	%
			Leached Lead (Pb)	2024/06/04		106	%
			Leached Selenium (Se)	2024/06/04		102	%
			Leached Uranium (U)	2024/06/04		104	%
			Leached Zinc (Zn)	2024/06/04		98	%
2527371	ST5	Method Blank	Leached Silver (Ag)	2024/06/04	<0.30		ug/L
			Leached Arsenic (As)	2024/06/04	<2.0		ug/L
			Leached Barium (Ba)	2024/06/04	<5.0		ug/L
			Leached Boron (B)	2024/06/04	<50		ug/L
			Leached Cadmium (Cd)	2024/06/04	<1.0		ug/L
			Leached Chromium (Cr)	2024/06/04	<7.0		ug/L
			Leached Cobalt (Co)	2024/06/04	<10		ug/L
			Leached Copper (Cu)	2024/06/04	<3.0		ug/L
			Leached Tin (Sn)	2024/06/04	<50		ug/L
			Leached Iron (Fe)	2024/06/04	<100		ug/L
			Leached Manganese (Mn)	2024/06/04	<3.0		ug/L
			Leached Mercury (Hg)	2024/06/04	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/06/04	<10		ug/L
			Leached Nickel (Ni)	2024/06/04	<6.0		ug/L
			Leached Lead (Pb)	2024/06/04	1.0, RDL=1.0		ug/L
			Leached Selenium (Se)	2024/06/04	<1.0		ug/L
			Leached Uranium (U)	2024/06/04	<0.60		ug/L
			Leached Zinc (Zn)	2024/06/04	10, RDL=5.0		ug/L

RDL = Reportable Detection Limit

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C424528
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001617

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Caroline Bougie, B.Sc. Chemist, Montreal, Laboratory Coordinator

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Submitted By:	Notification List
Receiving Lab:	Maxxam - Burnaby, BC
Received:	September 03, 2024
Analysis Start:	September 06, 2024
Report Date:	September 12, 2024
Page:	1 of 2

CERTIFICATE OF ANALYSIS VAN24001858.1

CLIENT JOB INFORMATION

Project:	C437195
Shipment ID:	
P.O. Number	
Number of Samples:	2

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	2	Sorting, labeling and boxing samples received as pulps			VAN
TC000-S	2	Total S Analysis by Leco	0.1	Completed	VAN

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Bureau Veritas Canada (2019) Inc.
4606 Canada Way
Burnaby British Columbia V5G 1K5
Canada

CC: Email Distribution List

KERRY JAY
Geochem Project Specialist

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C437195
Report Date: September 12, 2024

CERTIFICATE OF ANALYSIS VAN24001858.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
COB023-MZ5917-TSMC-120450-GD	Rock Pulp		0.02
COB024-MZ5918-TSMC-120451-GD	Rock Pulp		<0.02

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BUREAU VERITAS MINERAL LABORATORIES Canada

www.bvna.com/mining-laboratory-services

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Bureau Veritas Canada (2019) Inc.**
4606 Canada Way
Burnaby British Columbia V5G 1K5 Canada

Project: C437195

Report Date: September 12, 2024

QUALITY CONTROL REPORT VAN24001858.1

		Method	TC000
		Analyte	TOT/S
		Unit	%
		MDL	0.02
Reference Materials			
STD GS311-1	Standard		2.42
STD GS910-4	Standard		8.32
STD GS311-1 Expected			2.35
STD GS910-4 Expected			8.27
BLK	Blank		<0.02

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

Your P.O. #: 3000001770
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 142062

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015677
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C443527
Received: 2024/08/08, 09:00

Sample Matrix: Rock
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	1	N/A	N/A		
Fluoride (free) in soils	2	2024/08/14	2024/08/14	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	4	N/A	2024/08/13	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	2	N/A	2024/08/19	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	2	2024/08/12	2024/08/19	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	2	2024/08/12	2024/08/13	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	2	2024/08/10	2024/08/12	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	4	2024/08/13	2024/08/15	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Metals - Leached	2	2024/08/19	2024/08/24	STL SOP-00062	MA.200–Mét. 1.2 R7 m
Nitrates (NO3-),Nitrites (NO2-) leached	4	N/A	2024/08/14	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/08/19	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	2	2024/08/15	2024/08/16	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	2	N/A	2024/08/14	STL SOP-00028	MA. 310-CS 1.0 R3 m
Sulfur-soils (1)	1	N/A	N/A		
Toxicity Charact. Leach. Proc.(EPA 1311)	2	2024/08/12	2024/08/13	STL SOP-00024	MA100-Lixcom1.1 R1 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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Your P.O. #: 3000001770
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 142062

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015677
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C443527

Received: 2024/08/08, 09:00

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
24 Jan 2025 14:39:30

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001770
Sampler Initials: N-A

TOTAL EXTRACTABLE METALS (ROCK)

Bureau Veritas ID		NI6315	NI6316		
Sampling Date		2024/08/03	2024/08/03		
COC Number		142062	142062		
	Units	TSMC-122452-GD	TSMC-122453-GD	RDL	QC Batch
METALS					
Total Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	2554552
Total Extractable Arsenic (As)	mg/kg	8.0	5.0	2.0	2554552
Total Extractable Barium (Ba)	mg/kg	35	24	4.0	2554552
Total Extractable Boron (B)	mg/kg	<2.0	<2.0	2.0	2554552
Total Extractable Cadmium (Cd)	mg/kg	<0.10	<0.10	0.10	2554552
Total Extractable Chromium (Cr)	mg/kg	1.7	2.5	1.0	2554552
Total Extractable Copper (Cu)	mg/kg	1.9	3.4	1.0	2554552
Total Extractable Cobalt (Co)	mg/kg	3.9	4.7	1.0	2554552
Total Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	2554552
Total Extractable Iron (Fe) †	mg/kg	140000	180000	100	2554552
Total Extractable Manganese (Mn)	mg/kg	1500	830	2.0	2554552
Total Extractable Molybdenum (Mo)	mg/kg	<0.50	<0.50	0.50	2554552
Total Extractable Nickel (Ni)	mg/kg	0.92	1.3	0.50	2554552
Total Extractable Mercury (Hg)	mg/kg	0.064	0.041	0.010	2554552
Total Extractable Lead (Pb)	mg/kg	1.1	1.9	1.0	2554552
Total Extractable Selenium (Se)	mg/kg	<0.50	<0.50	0.50	2554552
Total Extractable Uranium (U) †	mg/kg	<2.0	<2.0	2.0	2554552
Total Extractable Zinc (Zn)	mg/kg	<5.0	6.5	5.0	2554552

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001770
Sampler Initials: N-A

METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NI6392		NI6393		NI6394		
Sampling Date		2024/08/03		2024/08/03		2024/08/03		
COC Number		142062		142062		142062		
	Units	TSMC-122452-GD (TCLP)	QC Batch	TSMC-122452-GD (SPLP-1312)	QC Batch	TSMC-122452-GD (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2555430	<0.30	2555439	<0.30	0.30	2557705
Leached Arsenic (As)	ug/L	<2.0	2555430	<2.0	2555439	<2.0	2.0	2557705
Leached Barium (Ba)	ug/L	6.2	2555430	<5.0	2555439	7.5	5.0	2557705
Leached Boron (B)	ug/L	<50	2555430	<50	2555439	<50	50	2557705
Leached Cadmium (Cd)	ug/L	<1.0	2555430	<1.0	2555439	<1.0	1.0	2557705
Leached Chromium (Cr)	ug/L	<7.0	2555430	<7.0	2555439	<7.0	7.0	2557705
Leached Cobalt (Co)	ug/L	<10	2555430	<10	2555439	<10	10	2557705
Leached Copper (Cu)	ug/L	<3.0	2555430	<3.0	2555439	<3.0	3.0	2557705
Leached Tin (Sn) †	ug/L	<50	2555430	<50	2555439	<50	50	2557705
Leached Iron (Fe)	ug/L	<100	2555430	<100	2555439	1400	100	2557705
Leached Manganese (Mn)	ug/L	270	2555430	6.1	2555439	900	3.0	2557705
Leached Mercury (Hg)	ug/L	<0.50	2555430	<0.50	2555439	<0.50	0.50	2557705
Leached Molybdenum (Mo)	ug/L	<10	2555430	<10	2555439	<10	10	2557705
Leached Nickel (Ni)	ug/L	<6.0	2555430	<6.0	2555439	<6.0	6.0	2557705
Leached Lead (Pb)	ug/L	<1.0	2555430	<1.0	2555439	<1.0	1.0	2557705
Leached Selenium (Se)	ug/L	<1.0	2555430	<1.0	2555439	<1.0	1.0	2557705
Leached Uranium (U)	ug/L	<0.60	2555430	<0.60	2555439	<0.60	0.60	2557705
Leached Zinc (Zn)	ug/L	<5.0	2555430	<5.0	2555439	<5.0	5.0	2557705

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001770
Sampler Initials: N-A

METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NI6432		NI6433		NI6434		
Sampling Date		2024/08/03		2024/08/03		2024/08/03		
COC Number		142062		142062		142062		
	Units	TSMC-122453-GD- (TCLP)	QC Batch	TSMC-122453-GD (SPLP-1312	QC Batch	TSMC-122453-GD(CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2555430	<0.30	2555439	<0.30	0.30	2557705
Leached Arsenic (As)	ug/L	<2.0	2555430	<2.0	2555439	<2.0	2.0	2557705
Leached Barium (Ba)	ug/L	<5.0	2555430	<5.0	2555439	<5.0	5.0	2557705
Leached Boron (B)	ug/L	<50	2555430	<50	2555439	<50	50	2557705
Leached Cadmium (Cd)	ug/L	<1.0	2555430	<1.0	2555439	<1.0	1.0	2557705
Leached Chromium (Cr)	ug/L	<7.0	2555430	<7.0	2555439	<7.0	7.0	2557705
Leached Cobalt (Co)	ug/L	<10	2555430	<10	2555439	<10	10	2557705
Leached Copper (Cu)	ug/L	<3.0	2555430	<3.0	2555439	<3.0	3.0	2557705
Leached Tin (Sn) †	ug/L	<50	2555430	<50	2555439	<50	50	2557705
Leached Iron (Fe)	ug/L	<100	2555430	<100	2555439	<100	100	2557705
Leached Manganese (Mn)	ug/L	170	2555430	43	2555439	41	3.0	2557705
Leached Mercury (Hg)	ug/L	<0.50	2555430	<0.50	2555439	<0.50	0.50	2557705
Leached Molybdenum (Mo)	ug/L	<10	2555430	<10	2555439	<10	10	2557705
Leached Nickel (Ni)	ug/L	<6.0	2555430	<6.0	2555439	<6.0	6.0	2557705
Leached Lead (Pb)	ug/L	<1.0	2555430	<1.0	2555439	<1.0	1.0	2557705
Leached Selenium (Se)	ug/L	<1.0	2555430	<1.0	2555439	<1.0	1.0	2557705
Leached Uranium (U)	ug/L	<0.60	2555430	<0.60	2555439	<0.60	0.60	2557705
Leached Zinc (Zn)	ug/L	<5.0	2555430	<5.0	2555439	<5.0	5.0	2557705

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001770
Sampler Initials: N-A

CONVENTIONAL PARAMETERS (ROCK)

Bureau Veritas ID		NI6315	NI6316		
Sampling Date		2024/08/03	2024/08/03		
COC Number		142062	142062		
	Units	TSMC-122452-GD	TSMC-122453-GD	RDL	QC Batch
CONVENTIONALS					
Fluoride (F)	mg/kg	<1.0	<1.0	1.0	2555665
Sulfur (S)	% g/g	<0.010	<0.010	0.010	2555599
Nitrates (N-NO3-) †	mg/kg	13	7.0	1.0	2556423
Nitrites (N-NO2-) †	mg/kg	<0.20	<0.20	0.20	2556423

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NI6392		NI6393		
Sampling Date		2024/08/03		2024/08/03		
COC Number		142062		142062		
	Units	TSMC-122452-GD (TCLP)	QC Batch	TSMC-122452-GD (SPLP-1312)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2555378	<1.0	1.0	2555371
Leached Nitrites (N-NO2-)	mg/L	<0.20	2555418	<0.20	0.20	2555416
Leached Nitrates (N-NO3-)	mg/L	<0.20	2555418	N/A	0.20	N/A
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2555418	N/A	0.20	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		NI6394			NI6432		
Sampling Date		2024/08/03			2024/08/03		
COC Number		142062			142062		
	Units	TSMC-122452-GD (CTEU-9)	RDL	QC Batch	TSMC-122453-GD- (TCLP)	RDL	QC Batch
CONVENTIONALS							
Leached Fluoride (F)	mg/L	<1.0	1.0	2557598	0.25	0.10	2555378
Leached Nitrites (N-NO2-)	mg/L	<0.20	0.20	2557599	<0.20	0.20	2555418
Leached Nitrates (N-NO3-)	mg/L	0.25	0.20	2557599	<0.20	0.20	2555418
Leached Nitrate (N) and Nitrite(N)	mg/L	0.25	0.20	2557599	<0.20	0.20	2555418

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		NI6433		NI6434		
Sampling Date		2024/08/03		2024/08/03		
COC Number		142062		142062		
	Units	TSMC-122453-GD (SPLP-1312	QC Batch	TSMC-122453-GD(CTEU-9)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2555371	<1.0	1.0	2557598
Leached Nitrites (N-NO2-)	mg/L	<0.20	2555416	<0.20	0.20	2557599
Leached Nitrates (N-NO3-)	mg/L	N/A	N/A	0.72	0.20	2557599
Leached Nitrate (N) and Nitrite(N)	mg/L	N/A	N/A	0.72	0.20	2557599

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001770
Sampler Initials: N-A

TCLP-EPA 1311 (ROCK)

Bureau Veritas ID		NI6392	NI6432	
Sampling Date		2024/08/03	2024/08/03	
COC Number		142062	142062	
	Units	TSMC-122452-GD (TCLP)	TSMC-122453-GD- (TCLP)	QC Batch
Leachates				
Weight of sample (g)	n/a	20.0	20.0	2554783
pH of pre-test	n/a	<1.68	<1.68	2554783
pH end of leaching	n/a	4.86	4.86	2554783
Volume extracting fluid 1 (ml)	n/a	400	400	2554783

QC Batch = Quality Control Batch

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SPLP-EPA 1312 (ROCK)

Bureau Veritas ID		NI6393	NI6433	
Sampling Date		2024/08/03	2024/08/03	
COC Number		142062	142062	
	Units	TSMC-122452-GD (SPLP-1312)	TSMC-122453-GD (SPLP-1312	QC Batch
Leachates				
Weight of sample (g)	n/a	25.0	25.0	2554782
Volume of extracting fluid (mL)	n/a	500	500	2554782
pH after 18 hours leaching	n/a	5.36	5.34	2554782
pH of extracting fluid	n/a	4.18	4.18	2554782
QC Batch = Quality Control Batch				

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WATER LEACHATE-CTEU-9 (ROCK)

Bureau Veritas ID		NI6394	NI6434	
Sampling Date		2024/08/03	2024/08/03	
COC Number		142062	142062	
	Units	TSMC-122452-GD (CTEU-9)	TSMC-122453-GD(CTEU-9)	QC Batch
Leachates				
Weight of sample (g)	n/a	40.1	40.1	2554752
pH Deionized water	n/a	5.88	5.88	2554752
Date extraction fluid added	n/a	2024/08/12	2024/08/12	2554752
Date leaching terminated	n/a	2024/08/19	2024/08/19	2554752
Volume of extracting fluid (mL)	n/a	160	160	2554752
pH after 7 days of leaching	n/a	7.25	7.04	2554752

QC Batch = Quality Control Batch

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Bureau Veritas Job #: C443527
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001770
Sampler Initials: N-A

GENERAL COMMENTS

Revised report: As per client request received by e-mail on January 15, 2025, Hg has been added to the parameters reported.

TOTAL EXTRACTABLE METALS (ROCK)

Les limites de détections indiquées sont multipliées par les facteurs de dilution utilisés pour l'analyse des échantillons.

CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Les limites de détections indiquées sont multipliées par les facteurs de dilution utilisés pour l'analyse des échantillons.

TCLP-EPA 1311 (ROCK)

pH du pre-test : veuillez noter que le résultat de l'échantillons NI6392 et NI6432 sont en dehors de la courbe de calibration et à l'extérieur des limites de linéarité.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2554552	CBO	Spiked Blank	Total Extractable Silver (Ag)	2024/08/12		97	%
			Total Extractable Arsenic (As)	2024/08/12		99	%
			Total Extractable Barium (Ba)	2024/08/12		105	%
			Total Extractable Boron (B)	2024/08/12		124	%
			Total Extractable Cadmium (Cd)	2024/08/12		99	%
			Total Extractable Chromium (Cr)	2024/08/12		95	%
			Total Extractable Copper (Cu)	2024/08/12		95	%
			Total Extractable Cobalt (Co)	2024/08/12		95	%
			Total Extractable Tin (Sn)	2024/08/12		104	%
			Total Extractable Iron (Fe)	2024/08/12		94	%
			Total Extractable Manganese (Mn)	2024/08/12		96	%
			Total Extractable Molybdenum (Mo)	2024/08/12		96	%
			Total Extractable Nickel (Ni)	2024/08/12		97	%
			Total Extractable Mercury (Hg)	2024/08/12		94	%
			Total Extractable Lead (Pb)	2024/08/12		97	%
			Total Extractable Selenium (Se)	2024/08/12		92	%
			Total Extractable Uranium (U)	2024/08/12		100	%
			Total Extractable Zinc (Zn)	2024/08/12		95	%
2554552	CBO	Method Blank	Total Extractable Silver (Ag)	2024/08/12	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/08/12	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/08/12	<4.0		mg/kg
			Total Extractable Boron (B)	2024/08/12	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/08/12	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/08/12	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/08/12	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/08/12	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/08/12	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/08/12	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/08/12	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/08/12	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/08/12	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/08/12	<0.010		mg/kg
			Total Extractable Lead (Pb)	2024/08/12	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/08/12	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/08/12	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/08/12	<5.0		mg/kg
2554752	RS3	Method Blank	pH Deionized water	2024/08/19	5.88		n/a
			Date extraction fluid added	2024/08/19	2024/08/12		n/a
			Date leaching terminated	2024/08/19	2024/08/19		n/a
			Volume of extracting fluid (mL)	2024/08/19	160		n/a
			pH after 7 days of leaching	2024/08/19	6.90		n/a
2554782	MFL	Method Blank	Volume of extracting fluid (mL)	2024/08/13	500		n/a
			pH after 18 hours leaching	2024/08/13	4.18		n/a
			pH of extracting fluid	2024/08/13	4.18		n/a
2554783	RS3	Method Blank	pH end of leaching	2024/08/13	4.94/2.87		n/a
			Volume extracting fluid 1 (ml)	2024/08/13	400		n/a
2555371	KME	LEACH. BLANK	Leached Fluoride (F)	2024/08/13	<1.0		mg/L
2555371	KME	Spiked Blank	Leached Fluoride (F)	2024/08/13		98	%
2555378	KME	LEACH. BLANK	Leached Fluoride (F)	2024/08/13	<1.0		mg/L
2555378	KME	Spiked Blank	Leached Fluoride (F)	2024/08/13		99	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2555416	M2S	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/08/14	<0.20		mg/L
2555416	M2S	Spiked Blank	Leached Nitrites (N-NO2-)	2024/08/14		93	%
2555418	M2S	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/08/14	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/08/14	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/08/14	<0.20		mg/L
2555418	M2S	Spiked Blank	Leached Nitrites (N-NO2-)	2024/08/14		94	%
			Leached Nitrates (N-NO3-)	2024/08/14		92	%
			Leached Nitrate (N) and Nitrite(N)	2024/08/14		93	%
2555430	JGK	LEACH. BLANK	Leached Silver (Ag)	2024/08/15	<0.30		ug/L
			Leached Arsenic (As)	2024/08/15	<2.0		ug/L
			Leached Barium (Ba)	2024/08/15	<5.0		ug/L
			Leached Boron (B)	2024/08/15	<50		ug/L
			Leached Cadmium (Cd)	2024/08/15	<1.0		ug/L
			Leached Chromium (Cr)	2024/08/15	<7.0		ug/L
			Leached Cobalt (Co)	2024/08/15	<10		ug/L
			Leached Copper (Cu)	2024/08/15	<3.0		ug/L
			Leached Tin (Sn)	2024/08/15	<50		ug/L
			Leached Iron (Fe)	2024/08/15	<100		ug/L
			Leached Manganese (Mn)	2024/08/15	<3.0		ug/L
			Leached Mercury (Hg)	2024/08/15	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/08/15	<10		ug/L
			Leached Nickel (Ni)	2024/08/15	<6.0		ug/L
			Leached Lead (Pb)	2024/08/15	<1.0		ug/L
			Leached Selenium (Se)	2024/08/15	<1.0		ug/L
			Leached Uranium (U)	2024/08/15	<0.60		ug/L
			Leached Zinc (Zn)	2024/08/15	<5.0		ug/L
2555430	JGK	Spiked Blank	Leached Silver (Ag)	2024/08/15		100	%
			Leached Arsenic (As)	2024/08/15		97	%
			Leached Barium (Ba)	2024/08/15		101	%
			Leached Boron (B)	2024/08/15		100	%
			Leached Cadmium (Cd)	2024/08/15		98	%
			Leached Chromium (Cr)	2024/08/15		96	%
			Leached Cobalt (Co)	2024/08/15		94	%
			Leached Copper (Cu)	2024/08/15		91	%
			Leached Tin (Sn)	2024/08/15		116	%
			Leached Iron (Fe)	2024/08/15		97	%
			Leached Manganese (Mn)	2024/08/15		98	%
			Leached Mercury (Hg)	2024/08/15		94	%
			Leached Molybdenum (Mo)	2024/08/15		99	%
			Leached Nickel (Ni)	2024/08/15		92	%
			Leached Lead (Pb)	2024/08/15		97	%
			Leached Selenium (Se)	2024/08/15		104	%
			Leached Uranium (U)	2024/08/15		94	%
			Leached Zinc (Zn)	2024/08/15		94	%
2555430	JGK	Method Blank	Leached Silver (Ag)	2024/08/15	<0.30		ug/L
			Leached Arsenic (As)	2024/08/15	<2.0		ug/L
			Leached Barium (Ba)	2024/08/15	<5.0		ug/L
			Leached Boron (B)	2024/08/15	<50		ug/L
			Leached Cadmium (Cd)	2024/08/15	<1.0		ug/L
			Leached Chromium (Cr)	2024/08/15	<7.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Cobalt (Co)	2024/08/15	<10		ug/L
			Leached Copper (Cu)	2024/08/15	<3.0		ug/L
			Leached Tin (Sn)	2024/08/15	<50		ug/L
			Leached Iron (Fe)	2024/08/15	<100		ug/L
			Leached Manganese (Mn)	2024/08/15	<3.0		ug/L
			Leached Mercury (Hg)	2024/08/15	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/08/15	<10		ug/L
			Leached Nickel (Ni)	2024/08/15	<6.0		ug/L
			Leached Lead (Pb)	2024/08/15	<1.0		ug/L
			Leached Selenium (Se)	2024/08/15	<1.0		ug/L
			Leached Uranium (U)	2024/08/15	<0.60		ug/L
			Leached Zinc (Zn)	2024/08/15	<5.0		ug/L
2555439	JGK	LEACH. BLANK	Leached Silver (Ag)	2024/08/15	<0.30		ug/L
			Leached Arsenic (As)	2024/08/15	<2.0		ug/L
			Leached Barium (Ba)	2024/08/15	<5.0		ug/L
			Leached Boron (B)	2024/08/15	<50		ug/L
			Leached Cadmium (Cd)	2024/08/15	<1.0		ug/L
			Leached Chromium (Cr)	2024/08/15	<7.0		ug/L
			Leached Cobalt (Co)	2024/08/15	<10		ug/L
			Leached Copper (Cu)	2024/08/15	<3.0		ug/L
			Leached Tin (Sn)	2024/08/15	<50		ug/L
			Leached Iron (Fe)	2024/08/15	<100		ug/L
			Leached Manganese (Mn)	2024/08/15	<3.0		ug/L
			Leached Mercury (Hg)	2024/08/15	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/08/15	<10		ug/L
			Leached Nickel (Ni)	2024/08/15	<6.0		ug/L
			Leached Lead (Pb)	2024/08/15	<1.0		ug/L
			Leached Selenium (Se)	2024/08/15	<1.0		ug/L
			Leached Uranium (U)	2024/08/15	<0.60		ug/L
			Leached Zinc (Zn)	2024/08/15	<5.0		ug/L
2555439	JGK	Spiked Blank	Leached Silver (Ag)	2024/08/15		103	%
			Leached Arsenic (As)	2024/08/15		102	%
			Leached Barium (Ba)	2024/08/15		107	%
			Leached Boron (B)	2024/08/15		107	%
			Leached Cadmium (Cd)	2024/08/15		107	%
			Leached Chromium (Cr)	2024/08/15		98	%
			Leached Cobalt (Co)	2024/08/15		97	%
			Leached Copper (Cu)	2024/08/15		94	%
			Leached Tin (Sn)	2024/08/15		117	%
			Leached Iron (Fe)	2024/08/15		101	%
			Leached Manganese (Mn)	2024/08/15		100	%
			Leached Mercury (Hg)	2024/08/15		100	%
			Leached Molybdenum (Mo)	2024/08/15		105	%
			Leached Nickel (Ni)	2024/08/15		94	%
			Leached Lead (Pb)	2024/08/15		103	%
			Leached Selenium (Se)	2024/08/15		105	%
			Leached Uranium (U)	2024/08/15		102	%
			Leached Zinc (Zn)	2024/08/15		97	%
2555439	JGK	Method Blank	Leached Silver (Ag)	2024/08/15	<0.30		ug/L
			Leached Arsenic (As)	2024/08/15	<2.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Barium (Ba)	2024/08/15	<5.0		ug/L
			Leached Boron (B)	2024/08/15	<50		ug/L
			Leached Cadmium (Cd)	2024/08/15	<1.0		ug/L
			Leached Chromium (Cr)	2024/08/15	<7.0		ug/L
			Leached Cobalt (Co)	2024/08/15	<10		ug/L
			Leached Copper (Cu)	2024/08/15	<3.0		ug/L
			Leached Tin (Sn)	2024/08/15	<50		ug/L
			Leached Iron (Fe)	2024/08/15	<100		ug/L
			Leached Manganese (Mn)	2024/08/15	<3.0		ug/L
			Leached Mercury (Hg)	2024/08/15	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/08/15	<10		ug/L
			Leached Nickel (Ni)	2024/08/15	<6.0		ug/L
			Leached Lead (Pb)	2024/08/15	<1.0		ug/L
			Leached Selenium (Se)	2024/08/15	<1.0		ug/L
			Leached Uranium (U)	2024/08/15	<0.60		ug/L
			Leached Zinc (Zn)	2024/08/15	<5.0		ug/L
2555599	ZZH	QC Standard	Sulfur (S)	2024/08/14		94	%
2555599	ZZH	Method Blank	Sulfur (S)	2024/08/14	<0.010		% g/g
2555665	KME	Spiked Blank	Fluoride (F)	2024/08/14		104	%
2555665	KME	Method Blank	Fluoride (F)	2024/08/14	<1.0		mg/kg
2556423	M2S	Spiked Blank	Nitrates (N-NO3-)	2024/08/15		95	%
			Nitrites (N-NO2-)	2024/08/15		93	%
2556423	M2S	Method Blank	Nitrates (N-NO3-)	2024/08/15	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/08/15	<0.20		mg/kg
2557598	KME	LEACH. BLANK	Leached Fluoride (F)	2024/08/19	<1.0		mg/L
2557598	KME	Spiked Blank	Leached Fluoride (F)	2024/08/19		100	%
2557599	LTA	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/08/19	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/08/19	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/08/19	<0.20		mg/L
2557599	LTA	Spiked Blank	Leached Nitrites (N-NO2-)	2024/08/19		92	%
			Leached Nitrates (N-NO3-)	2024/08/19		94	%
			Leached Nitrate (N) and Nitrite(N)	2024/08/19		93	%
2557705	ANB	LEACH. BLANK	Leached Silver (Ag)	2024/08/24	<0.30		ug/L
			Leached Arsenic (As)	2024/08/24	<2.0		ug/L
			Leached Barium (Ba)	2024/08/24	<5.0		ug/L
			Leached Boron (B)	2024/08/24	<50		ug/L
			Leached Cadmium (Cd)	2024/08/24	<1.0		ug/L
			Leached Chromium (Cr)	2024/08/24	<7.0		ug/L
			Leached Cobalt (Co)	2024/08/24	<10		ug/L
			Leached Copper (Cu)	2024/08/24	<3.0		ug/L
			Leached Tin (Sn)	2024/08/24	<50		ug/L
			Leached Iron (Fe)	2024/08/24	<100		ug/L
			Leached Manganese (Mn)	2024/08/24	<3.0		ug/L
			Leached Mercury (Hg)	2024/08/24	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/08/24	<10		ug/L
			Leached Nickel (Ni)	2024/08/24	<6.0		ug/L
			Leached Lead (Pb)	2024/08/24	<1.0		ug/L
			Leached Selenium (Se)	2024/08/24	<1.0		ug/L
			Leached Uranium (U)	2024/08/24	<0.60		ug/L
			Leached Zinc (Zn)	2024/08/24	<5.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2557705	ANB	Spiked Blank	Leached Silver (Ag)	2024/08/24		109	%
			Leached Arsenic (As)	2024/08/24		115	%
			Leached Barium (Ba)	2024/08/24		113	%
			Leached Boron (B)	2024/08/24		109	%
			Leached Cadmium (Cd)	2024/08/24		112	%
			Leached Chromium (Cr)	2024/08/24		111	%
			Leached Cobalt (Co)	2024/08/24		108	%
			Leached Copper (Cu)	2024/08/24		106	%
			Leached Tin (Sn)	2024/08/24		114	%
			Leached Iron (Fe)	2024/08/24		102	%
			Leached Manganese (Mn)	2024/08/24		111	%
			Leached Mercury (Hg)	2024/08/24		104	%
			Leached Molybdenum (Mo)	2024/08/24		112	%
			Leached Nickel (Ni)	2024/08/24		106	%
			Leached Lead (Pb)	2024/08/24		107	%
			Leached Selenium (Se)	2024/08/24		112	%
			Leached Uranium (U)	2024/08/24		104	%
			Leached Zinc (Zn)	2024/08/24		105	%
2557705	ANB	Method Blank	Leached Silver (Ag)	2024/08/24	<0.30		ug/L
			Leached Arsenic (As)	2024/08/24	<2.0		ug/L
			Leached Barium (Ba)	2024/08/24	<5.0		ug/L
			Leached Boron (B)	2024/08/24	<50		ug/L
			Leached Cadmium (Cd)	2024/08/24	<1.0		ug/L
			Leached Chromium (Cr)	2024/08/24	<7.0		ug/L
			Leached Cobalt (Co)	2024/08/24	<10		ug/L
			Leached Copper (Cu)	2024/08/24	<3.0		ug/L
			Leached Tin (Sn)	2024/08/24	<50		ug/L
			Leached Iron (Fe)	2024/08/24	<100		ug/L
			Leached Manganese (Mn)	2024/08/24	<3.0		ug/L
			Leached Mercury (Hg)	2024/08/24	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/08/24	<10		ug/L
			Leached Nickel (Ni)	2024/08/24	<6.0		ug/L
			Leached Lead (Pb)	2024/08/24	<1.0		ug/L
			Leached Selenium (Se)	2024/08/24	<1.0		ug/L
			Leached Uranium (U)	2024/08/24	<0.60		ug/L
			Leached Zinc (Zn)	2024/08/24	<5.0		ug/L

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C443527
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001770
Sampler Initials: N-A

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cansu Bolukbas
Membre OCQ#2324-095
Cansu Bolukbas, B.Sc., Chemist, Montreal, Analyst II

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Levon Arslanian, Project Manager

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Table 1: ABA Test Results for project Tata Steel

BV Labs Sample No	Sample ID	Paste pH	Total S
	Units	pH Units	%
DAV665	NI6315-TSMC-122452-GD	5.95	0.03
Detection Limits		*N/A*	*0.02*
Bureau Veritas SOP #		*BBY0SOP-00016*	*CAL SOP-00243*

Notes:

Price, W.A. 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MI
Price, WA. MEND Prediction Manual 1.20.1 (2009)EPA 600/2-78-054 p. 47-50
Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M. (March 1978), Field and Laboratory M
NCP-non calculable parameter

References:

Acid Generation Potential = HNO3 Extractable Sulphide Sulphur*31.25
Fizz Rating - Reference method used is based on NP method.
HCl Extractable Sulphur and HNO3 Extractable Sulphur is based on a modified version of ASTM M
HCl Extractable Sulphur is based on a modified version of ASTM Method D 2492-02
Mod. ABA Neutralization Potential - MEND Acid Rock Drainage Prediction Manual, MEND Project
Net Neutralization Potential = (Modified ABA Neutralization Potential)-(Acid Generation Potential (I
Neutralization Potential Ratio = (Neutralization Potential)/(Acid Generation Potential)
Non Extractable Sulphur = (Total Sulphur)-(HCl Extractable Sulphate Sulphur)-(HNO3 Extractable
Paste pH - Field and Laboratory Methods Applicable to Overburdens and Minesoils, (EPA 600 / 2-

NC.

HCl Extractable Sulphate Sulphur wt%	HNO3 Extractable Sulphur wt%	Non Extractable Sulphur (by diff.) wt%	Acid Generation Potential Kg CaCO3/T
0.02	<0.01	<0.02	<0.3
0.01	*0.01*	*0.02*	*0.3*
BBY ARD-00009	*BBY ARD-00009*	*BBY WI-00033*	*BBY WI-00033*

END Report 1.20.1

Methods Applicable to Overburden and Minesoils, Report EPA-600/2-78-054, U.S. National Technical I

Method D 2492-02

1.16.1b (pages 6.2-11 to 17), March 1991.
HNO3 Extr))

Sulphide Sulphur)
78-054, March 1978).

Mod. ABA Neutralization Potential Kg CaCO3/T	Fizz Rating N/A	Net Neutralization Potential Kg CaCO3/T
-0.3	NONE	-0.3
N/A	*N/A*	*N/A*
BBY0SOP-00020	*0SOP-00020 / BBY0SOP-0(*	*BBY WI-00033*

nformation Service Report PB-280 495 pages 46-47.

Neutralization Potential Ratio N/A
NCP
0.1
BBY WI-00033

Your P.O. #: 3000001868
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 150605

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015678
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C459837
Received: 2024/10/15, 13:30

Sample Matrix: Rock
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	2	N/A	N/A		
Fluoride (free) in soils	2	2024/10/21	2024/10/21	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	2	N/A	2024/10/23	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	2	N/A	2024/10/24	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	2	N/A	2024/10/30	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	2	2024/10/22	2024/10/29	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	2	2024/10/21	2024/10/22	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	2	2024/10/18	2024/10/21	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	4	2024/10/23	2024/10/25	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Metals - Leached	2	2024/10/29	2024/10/29	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/10/23	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/10/24	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	2	N/A	2024/10/30	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	2	2024/10/21	2024/10/21	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	2	N/A	2024/10/21	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	2	2024/10/22	2024/10/23	STL SOP-00024	MA100-Lixcom1.1 R1 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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Your P.O. #: 3000001868
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 150605

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015678
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C459837
Received: 2024/10/15, 13:30

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
24 Jan 2025 14:41:47

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

TOTAL EXTRACTABLE METALS (ROCK)

Bureau Veritas ID		NQ7050	NQ7054		
Sampling Date		2024/10/06	2024/10/06		
COC Number		150605	150605		
	Units	TSMC-123449-GD	TSMC-123450-GD	RDL	QC Batch
% MOISTURE	%	6.2	8.8	N/A	N/A
METALS					
Total Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	2581800
Total Extractable Arsenic (As)	mg/kg	5.2	3.3	2.0	2581800
Total Extractable Barium (Ba)	mg/kg	<4.0	<4.0	4.0	2581800
Total Extractable Boron (B)	mg/kg	<2.0	<2.0	2.0	2581800
Total Extractable Cadmium (Cd)	mg/kg	<0.10	<0.10	0.10	2581800
Total Extractable Chromium (Cr)	mg/kg	2.3	1.2	1.0	2581800
Total Extractable Copper (Cu)	mg/kg	2.6	2.3	1.0	2581800
Total Extractable Cobalt (Co)	mg/kg	<1.0	3.9	1.0	2581800
Total Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	2581800
Total Extractable Iron (Fe) †	mg/kg	120000	120000	100	2581800
Total Extractable Manganese (Mn)	mg/kg	100	420	2.0	2581800
Total Extractable Molybdenum (Mo)	mg/kg	<0.50	<0.50	0.50	2581800
Total Extractable Nickel (Ni)	mg/kg	0.60	1.4	0.50	2581800
Total Extractable Mercury (Hg)	mg/kg	0.043	<0.010	0.010	2581800
Total Extractable Lead (Pb)	mg/kg	<1.0	<1.0	1.0	2581800
Total Extractable Selenium (Se)	mg/kg	<0.50	<0.50	0.50	2581800
Total Extractable Uranium (U) †	mg/kg	<2.0	<2.0	2.0	2581800
Total Extractable Zinc (Zn)	mg/kg	<5.0	6.5	5.0	2581800

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NQ7051		NQ7052		NQ7053		
Sampling Date		2024/10/06		2024/10/06		2024/10/06		
COC Number		150605		150605		150605		
	Units	TSMC-123449-GD (TCLP)	QC Batch	TSMC-123449-GD (SPLP 1312)	QC Batch	TSMC-123449-GD (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2583802	<0.30	2583728	<0.30	0.30	2586084
Leached Arsenic (As)	ug/L	<2.0	2583802	<2.0	2583728	<2.0	2.0	2586084
Leached Barium (Ba)	ug/L	<5.0	2583802	<5.0	2583728	<5.0	5.0	2586084
Leached Boron (B)	ug/L	<50	2583802	<50	2583728	<50	50	2586084
Leached Cadmium (Cd)	ug/L	<1.0	2583802	<1.0	2583728	<1.0	1.0	2586084
Leached Chromium (Cr)	ug/L	<7.0	2583802	<7.0	2583728	<7.0	7.0	2586084
Leached Cobalt (Co)	ug/L	<10	2583802	<10	2583728	<10	10	2586084
Leached Copper (Cu)	ug/L	<3.0	2583802	<3.0	2583728	<3.0	3.0	2586084
Leached Tin (Sn) †	ug/L	<50	2583802	<50	2583728	<50	50	2586084
Leached Iron (Fe)	ug/L	<100	2583802	<100	2583728	<100	100	2586084
Leached Manganese (Mn)	ug/L	30	2583802	53	2583728	49	3.0	2586084
Leached Mercury (Hg)	ug/L	<0.50	2583802	<0.50	2583728	<0.50	0.50	2586084
Leached Molybdenum (Mo)	ug/L	<10	2583802	<10	2583728	<10	10	2586084
Leached Nickel (Ni)	ug/L	<6.0	2583802	<6.0	2583728	<6.0	6.0	2586084
Leached Lead (Pb)	ug/L	<1.0	2583802	<1.0	2583728	<1.0	1.0	2586084
Leached Selenium (Se)	ug/L	<1.0	2583802	<1.0	2583728	<1.0	1.0	2586084
Leached Uranium (U)	ug/L	<0.60	2583802	<0.60	2583728	<0.60	0.60	2586084
Leached Zinc (Zn)	ug/L	<5.0	2583802	<5.0	2583728	<5.0	5.0	2586084

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NQ7055		NQ7056		NQ7057		
Sampling Date		2024/10/06		2024/10/06		2024/10/06		
COC Number		150605		150605		150605		
	Units	TSMC-123450-GD (TCLP)	QC Batch	TSMC-123450-GD (SPLP 1312)	QC Batch	TSMC-123450-GD (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2583802	<0.30	2583728	<0.30	0.30	2586084
Leached Arsenic (As)	ug/L	<2.0	2583802	<2.0	2583728	<2.0	2.0	2586084
Leached Barium (Ba)	ug/L	<5.0	2583802	<5.0	2583728	11	5.0	2586084
Leached Boron (B)	ug/L	<50	2583802	<50	2583728	65	50	2586084
Leached Cadmium (Cd)	ug/L	<1.0	2583802	<1.0	2583728	<1.0	1.0	2586084
Leached Chromium (Cr)	ug/L	<7.0	2583802	<7.0	2583728	<7.0	7.0	2586084
Leached Cobalt (Co)	ug/L	<10	2583802	<10	2583728	<10	10	2586084
Leached Copper (Cu)	ug/L	<3.0	2583802	<3.0	2583728	<3.0	3.0	2586084
Leached Tin (Sn) †	ug/L	<50	2583802	<50	2583728	<50	50	2586084
Leached Iron (Fe)	ug/L	<100	2583802	<100	2583728	190	100	2586084
Leached Manganese (Mn)	ug/L	93	2583802	46	2583728	32	3.0	2586084
Leached Mercury (Hg)	ug/L	<0.50	2583802	<0.50	2583728	<0.50	0.50	2586084
Leached Molybdenum (Mo)	ug/L	<10	2583802	<10	2583728	<10	10	2586084
Leached Nickel (Ni)	ug/L	<6.0	2583802	<6.0	2583728	<6.0	6.0	2586084
Leached Lead (Pb)	ug/L	<1.0	2583802	<1.0	2583728	<1.0	1.0	2586084
Leached Selenium (Se)	ug/L	<1.0	2583802	<1.0	2583728	<1.0	1.0	2586084
Leached Uranium (U)	ug/L	<0.60	2583802	<0.60	2583728	<0.60	0.60	2586084
Leached Zinc (Zn)	ug/L	<5.0	2583802	<5.0	2583728	<5.0	5.0	2586084

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS (ROCK)

Bureau Veritas ID		NQ7050	NQ7054		
Sampling Date		2024/10/06	2024/10/06		
COC Number		150605	150605		
	Units	TSMC-123449-GD	TSMC-123450-GD	RDL	QC Batch
% MOISTURE	%	6.2	8.8	N/A	N/A
CONVENTIONALS					
Fluoride (F)	mg/kg	<1.0	<1.0	1.0	2582366
Sulfur (S)	% g/g	<0.010	<0.010	0.010	2582379
Nitrates (N-NO3-) †	mg/kg	1.3	3.7	1.0	2582401
Nitrites (N-NO2-) †	mg/kg	<0.20	<0.20	0.20	2582401

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NQ7051		NQ7052		
Sampling Date		2024/10/06		2024/10/06		
COC Number		150605		150605		
	Units	TSMC-123449-GD (TCLP)	QC Batch	TSMC-123449-GD (SPLP 1312)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2584085	<1.0	1.0	2583427
Leached Nitrites (N-NO2-)	mg/L	<0.20	2584342	<0.20	0.20	2583444
Leached Nitrates (N-NO3-)	mg/L	<0.20	2584342	N/A	0.20	N/A
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2584342	N/A	0.20	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		NQ7053		NQ7055		
Sampling Date		2024/10/06		2024/10/06		
COC Number		150605		150605		
	Units	TSMC-123449-GD (CTEU-9)	QC Batch	TSMC-123450-GD (TCLP)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2586341	<1.0	1.0	2584085
Leached Nitrites (N-NO2-)	mg/L	<0.20	2586343	<0.20	0.20	2584342
Leached Nitrates (N-NO3-)	mg/L	<0.20	2586343	0.21	0.20	2584342
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2586343	0.21	0.20	2584342

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		NQ7056		NQ7057		
Sampling Date		2024/10/06		2024/10/06		
COC Number		150605		150605		
	Units	TSMC-123450-GD (SPLP 1312)	QC Batch	TSMC-123450-GD (CTEU-9)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2583427	<1.0	1.0	2586341
Leached Nitrites (N-NO2-)	mg/L	<0.20	2583444	<0.20	0.20	2586343
Leached Nitrates (N-NO3-)	mg/L	N/A	N/A	0.48	0.20	2586343
Leached Nitrate (N) and Nitrite(N)	mg/L	N/A	N/A	0.48	0.20	2586343

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

TCLP-EPA 1311 (ROCK)

Bureau Veritas ID		NQ7051	NQ7055	
Sampling Date		2024/10/06	2024/10/06	
COC Number		150605	150605	
	Units	TSMC-123449-GD (TCLP)	TSMC-123450-GD (TCLP)	QC Batch
Leachates				
Weight of sample (g)	n/a	20.2	20.1	2582908
pH of pre-test	n/a	<1.68	<1.68	2582908
pH end of leaching	n/a	4.96	4.96	2582908
Volume extracting fluid 1 (ml)	n/a	400	400	2582908

QC Batch = Quality Control Batch

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SPLP-EPA 1312 (ROCK)

Bureau Veritas ID		NQ7052	NQ7056	
Sampling Date		2024/10/06	2024/10/06	
COC Number		150605	150605	
	Units	TSMC-123449-GD (SPLP 1312)	TSMC-123450-GD (SPLP 1312)	QC Batch
Leachates				
Weight of sample (g)	n/a	25.1	25.0	2582730
Volume of extracting fluid (mL)	n/a	500	500	2582730
pH after 18 hours leaching	n/a	5.81	5.38	2582730
pH of extracting fluid	n/a	4.22	4.22	2582730
QC Batch = Quality Control Batch				

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WATER LEACHATE-CTEU-9 (ROCK)

Bureau Veritas ID		NQ7053	NQ7057	
Sampling Date		2024/10/06	2024/10/06	
COC Number		150605	150605	
	Units	TSMC-123449-GD (CTEU-9)	TSMC-123450-GD (CTEU-9)	QC Batch
Leachates				
Weight of sample (g)	n/a	40.0	40.1	2582876
pH Deionized water	n/a	5.62	5.62	2582876
Date extraction fluid added	n/a	2024/10/22	2024/10/22	2582876
Date leaching terminated	n/a	2024/10/29	2024/10/29	2582876
Volume of extracting fluid (mL)	n/a	160	160	2582876
pH after 7 days of leaching	n/a	8.42	8.24	2582876

QC Batch = Quality Control Batch

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GENERAL COMMENTS

Revised report: As per client request received by e-mail on January 15, 2025, Hg has been added to the parameters reported.

TOTAL EXTRACTABLE METALS (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (ROCK)

pH du pré-test: Veuillez noter que le résultat des échantillons NQ7051 et NQ7055 sont en dehors de la courbe de calibration.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2581800	CYU	Spiked Blank	Total Extractable Silver (Ag)	2024/10/21		104	%
			Total Extractable Arsenic (As)	2024/10/21		106	%
			Total Extractable Barium (Ba)	2024/10/21		108	%
			Total Extractable Boron (B)	2024/10/21		112	%
			Total Extractable Cadmium (Cd)	2024/10/21		103	%
			Total Extractable Chromium (Cr)	2024/10/21		102	%
			Total Extractable Copper (Cu)	2024/10/21		103	%
			Total Extractable Cobalt (Co)	2024/10/21		103	%
			Total Extractable Tin (Sn)	2024/10/21		109	%
			Total Extractable Iron (Fe)	2024/10/21		101	%
			Total Extractable Manganese (Mn)	2024/10/21		103	%
			Total Extractable Molybdenum (Mo)	2024/10/21		103	%
			Total Extractable Nickel (Ni)	2024/10/21		102	%
			Total Extractable Mercury (Hg)	2024/10/21		106	%
			Total Extractable Lead (Pb)	2024/10/21		108	%
			Total Extractable Selenium (Se)	2024/10/21		106	%
			Total Extractable Uranium (U)	2024/10/21		108	%
			Total Extractable Zinc (Zn)	2024/10/21		103	%
2581800	CYU	Method Blank	Total Extractable Silver (Ag)	2024/10/21	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/10/21	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/10/21	<4.0		mg/kg
			Total Extractable Boron (B)	2024/10/21	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/10/21	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/10/21	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/10/21	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/10/21	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/10/21	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/10/21	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/10/21	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/10/21	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/10/21	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/10/21	<0.010		mg/kg
			Total Extractable Lead (Pb)	2024/10/21	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/10/21	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/10/21	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/10/21	<5.0		mg/kg
2582366	LI	Spiked Blank	Fluoride (F)	2024/10/21		105	%
2582366	LI	Method Blank	Fluoride (F)	2024/10/21	<1.0		mg/kg
2582379	ZLI	QC Standard	Sulfur (S)	2024/10/21		91	%
2582379	ZLI	Method Blank	Sulfur (S)	2024/10/21	<0.010		% g/g
2582401	LTA	Spiked Blank	Nitrates (N-NO3-)	2024/10/21		99	%
			Nitrites (N-NO2-)	2024/10/21		102	%
2582401	LTA	Method Blank	Nitrates (N-NO3-)	2024/10/21	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/10/21	<0.20		mg/kg
2582730	JNA	Method Blank	Volume of extracting fluid (mL)	2024/10/22	500		n/a
			pH after 18 hours leaching	2024/10/22	4.23		n/a
			pH of extracting fluid	2024/10/22	4.22		n/a
2582876	MFL	Method Blank	pH Deionized water	2024/10/29	5.62		n/a
			Date extraction fluid added	2024/10/29	2024/10/22		n/a
			Date leaching terminated	2024/10/29	2024/10/29		n/a

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Volume of extracting fluid (mL)	2024/10/29	160		n/a
			pH after 7 days of leaching	2024/10/29	6.95		n/a
2582908	MFL	Method Blank	pH end of leaching	2024/10/23	4.93/2.93		n/a
			Volume extracting fluid 1 (ml)	2024/10/23	400		n/a
2583427	LI	LEACH. BLANK	Leached Fluoride (F)	2024/10/23	<1.0		mg/L
2583427	LI	Spiked Blank	Leached Fluoride (F)	2024/10/23		98	%
2583444	GXL	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/10/23	<0.20		mg/L
2583444	GXL	Spiked Blank	Leached Nitrites (N-NO2-)	2024/10/23		101	%
2583728	DPA	LEACH. BLANK	Leached Silver (Ag)	2024/10/25	<0.30		ug/L
			Leached Arsenic (As)	2024/10/25	<2.0		ug/L
			Leached Barium (Ba)	2024/10/25	<5.0		ug/L
			Leached Boron (B)	2024/10/25	<50		ug/L
			Leached Cadmium (Cd)	2024/10/25	<1.0		ug/L
			Leached Chromium (Cr)	2024/10/25	<7.0		ug/L
			Leached Cobalt (Co)	2024/10/25	<10		ug/L
			Leached Copper (Cu)	2024/10/25	<3.0		ug/L
			Leached Tin (Sn)	2024/10/25	<50		ug/L
			Leached Iron (Fe)	2024/10/25	<100		ug/L
			Leached Manganese (Mn)	2024/10/25	<3.0		ug/L
			Leached Mercury (Hg)	2024/10/25	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/10/25	<10		ug/L
			Leached Nickel (Ni)	2024/10/25	<6.0		ug/L
			Leached Lead (Pb)	2024/10/25	<1.0		ug/L
			Leached Selenium (Se)	2024/10/25	<1.0		ug/L
			Leached Uranium (U)	2024/10/25	<0.60		ug/L
			Leached Zinc (Zn)	2024/10/25	<5.0		ug/L
2583728	DPA	Spiked Blank	Leached Silver (Ag)	2024/10/25		99	%
			Leached Arsenic (As)	2024/10/25		106	%
			Leached Barium (Ba)	2024/10/25		101	%
			Leached Boron (B)	2024/10/25		113	%
			Leached Cadmium (Cd)	2024/10/25		106	%
			Leached Chromium (Cr)	2024/10/25		102	%
			Leached Cobalt (Co)	2024/10/25		102	%
			Leached Copper (Cu)	2024/10/25		100	%
			Leached Tin (Sn)	2024/10/25		110	%
			Leached Iron (Fe)	2024/10/25		98	%
			Leached Manganese (Mn)	2024/10/25		105	%
			Leached Mercury (Hg)	2024/10/25		103	%
			Leached Molybdenum (Mo)	2024/10/25		105	%
			Leached Nickel (Ni)	2024/10/25		99	%
			Leached Lead (Pb)	2024/10/25		105	%
			Leached Selenium (Se)	2024/10/25		115	%
			Leached Uranium (U)	2024/10/25		104	%
			Leached Zinc (Zn)	2024/10/25		102	%
2583728	DPA	Method Blank	Leached Silver (Ag)	2024/10/25	<0.30		ug/L
			Leached Arsenic (As)	2024/10/25	<2.0		ug/L
			Leached Barium (Ba)	2024/10/25	<5.0		ug/L
			Leached Boron (B)	2024/10/25	<50		ug/L
			Leached Cadmium (Cd)	2024/10/25	<1.0		ug/L
			Leached Chromium (Cr)	2024/10/25	<7.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Cobalt (Co)	2024/10/25	<10		ug/L
			Leached Copper (Cu)	2024/10/25	<3.0		ug/L
			Leached Tin (Sn)	2024/10/25	<50		ug/L
			Leached Iron (Fe)	2024/10/25	<100		ug/L
			Leached Manganese (Mn)	2024/10/25	<3.0		ug/L
			Leached Mercury (Hg)	2024/10/25	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/10/25	<10		ug/L
			Leached Nickel (Ni)	2024/10/25	<6.0		ug/L
			Leached Lead (Pb)	2024/10/25	<1.0		ug/L
			Leached Selenium (Se)	2024/10/25	<1.0		ug/L
			Leached Uranium (U)	2024/10/25	<0.60		ug/L
			Leached Zinc (Zn)	2024/10/25	<5.0		ug/L
2583802	DPA	LEACH. BLANK	Leached Silver (Ag)	2024/10/25	<0.30		ug/L
			Leached Arsenic (As)	2024/10/25	<2.0		ug/L
			Leached Barium (Ba)	2024/10/25	<5.0		ug/L
			Leached Boron (B)	2024/10/25	<50		ug/L
			Leached Cadmium (Cd)	2024/10/25	<1.0		ug/L
			Leached Chromium (Cr)	2024/10/25	<7.0		ug/L
			Leached Cobalt (Co)	2024/10/25	<10		ug/L
			Leached Copper (Cu)	2024/10/25	<3.0		ug/L
			Leached Tin (Sn)	2024/10/25	<50		ug/L
			Leached Iron (Fe)	2024/10/25	<100		ug/L
			Leached Manganese (Mn)	2024/10/25	<3.0		ug/L
			Leached Mercury (Hg)	2024/10/25	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/10/25	<10		ug/L
			Leached Nickel (Ni)	2024/10/25	<6.0		ug/L
			Leached Lead (Pb)	2024/10/25	<1.0		ug/L
			Leached Selenium (Se)	2024/10/25	<1.0		ug/L
			Leached Uranium (U)	2024/10/25	<0.60		ug/L
			Leached Zinc (Zn)	2024/10/25	<5.0		ug/L
2583802	DPA	Spiked Blank	Leached Silver (Ag)	2024/10/25		100	%
			Leached Arsenic (As)	2024/10/25		105	%
			Leached Barium (Ba)	2024/10/25		102	%
			Leached Boron (B)	2024/10/25		111	%
			Leached Cadmium (Cd)	2024/10/25		102	%
			Leached Chromium (Cr)	2024/10/25		100	%
			Leached Cobalt (Co)	2024/10/25		100	%
			Leached Copper (Cu)	2024/10/25		97	%
			Leached Tin (Sn)	2024/10/25		108	%
			Leached Iron (Fe)	2024/10/25		96	%
			Leached Manganese (Mn)	2024/10/25		104	%
			Leached Mercury (Hg)	2024/10/25		101	%
			Leached Molybdenum (Mo)	2024/10/25		106	%
			Leached Nickel (Ni)	2024/10/25		98	%
			Leached Lead (Pb)	2024/10/25		102	%
			Leached Selenium (Se)	2024/10/25		110	%
			Leached Uranium (U)	2024/10/25		102	%
			Leached Zinc (Zn)	2024/10/25		101	%
2583802	DPA	Method Blank	Leached Silver (Ag)	2024/10/25	<0.30		ug/L
			Leached Arsenic (As)	2024/10/25	<2.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Barium (Ba)	2024/10/25	<5.0		ug/L
			Leached Boron (B)	2024/10/25	<50		ug/L
			Leached Cadmium (Cd)	2024/10/25	<1.0		ug/L
			Leached Chromium (Cr)	2024/10/25	<7.0		ug/L
			Leached Cobalt (Co)	2024/10/25	<10		ug/L
			Leached Copper (Cu)	2024/10/25	<3.0		ug/L
			Leached Tin (Sn)	2024/10/25	<50		ug/L
			Leached Iron (Fe)	2024/10/25	<100		ug/L
			Leached Manganese (Mn)	2024/10/25	<3.0		ug/L
			Leached Mercury (Hg)	2024/10/25	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/10/25	<10		ug/L
			Leached Nickel (Ni)	2024/10/25	<6.0		ug/L
			Leached Lead (Pb)	2024/10/25	<1.0		ug/L
			Leached Selenium (Se)	2024/10/25	<1.0		ug/L
			Leached Uranium (U)	2024/10/25	<0.60		ug/L
			Leached Zinc (Zn)	2024/10/25	<5.0		ug/L
2584085	ZLI	LEACH. BLANK	Leached Fluoride (F)	2024/10/24	<1.0		mg/L
2584085	ZLI	Spiked Blank	Leached Fluoride (F)	2024/10/24		102	%
2584342	LTA	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/10/24	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/10/24	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/10/24	<0.20		mg/L
2584342	LTA	Spiked Blank	Leached Nitrites (N-NO2-)	2024/10/24		105	%
			Leached Nitrates (N-NO3-)	2024/10/24		101	%
			Leached Nitrate (N) and Nitrite(N)	2024/10/24		103	%
2586084	DPA	LEACH. BLANK	Leached Silver (Ag)	2024/10/29	<0.30		ug/L
			Leached Arsenic (As)	2024/10/29	<2.0		ug/L
			Leached Barium (Ba)	2024/10/29	<5.0		ug/L
			Leached Boron (B)	2024/10/29	<50		ug/L
			Leached Cadmium (Cd)	2024/10/29	<1.0		ug/L
			Leached Chromium (Cr)	2024/10/29	<7.0		ug/L
			Leached Cobalt (Co)	2024/10/29	<10		ug/L
			Leached Copper (Cu)	2024/10/29	<3.0		ug/L
			Leached Tin (Sn)	2024/10/29	<50		ug/L
			Leached Iron (Fe)	2024/10/29	<100		ug/L
			Leached Manganese (Mn)	2024/10/29	<3.0		ug/L
			Leached Mercury (Hg)	2024/10/29	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/10/29	<10		ug/L
			Leached Nickel (Ni)	2024/10/29	<6.0		ug/L
			Leached Lead (Pb)	2024/10/29	<1.0		ug/L
			Leached Selenium (Se)	2024/10/29	<1.0		ug/L
			Leached Uranium (U)	2024/10/29	<0.60		ug/L
			Leached Zinc (Zn)	2024/10/29	<5.0		ug/L
2586084	DPA	Spiked Blank	Leached Silver (Ag)	2024/10/29		91	%
			Leached Arsenic (As)	2024/10/29		94	%
			Leached Barium (Ba)	2024/10/29		93	%
			Leached Boron (B)	2024/10/29		97	%
			Leached Cadmium (Cd)	2024/10/29		97	%
			Leached Chromium (Cr)	2024/10/29		90	%
			Leached Cobalt (Co)	2024/10/29		87	%
			Leached Copper (Cu)	2024/10/29		88	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Tin (Sn)	2024/10/29		100	%
			Leached Iron (Fe)	2024/10/29		97	%
			Leached Manganese (Mn)	2024/10/29		89	%
			Leached Mercury (Hg)	2024/10/29		97	%
			Leached Molybdenum (Mo)	2024/10/29		97	%
			Leached Nickel (Ni)	2024/10/29		87	%
			Leached Lead (Pb)	2024/10/29		91	%
			Leached Selenium (Se)	2024/10/29		96	%
			Leached Uranium (U)	2024/10/29		91	%
			Leached Zinc (Zn)	2024/10/29		88	%
2586084	DPA	Method Blank	Leached Silver (Ag)	2024/10/29	<0.30		ug/L
			Leached Arsenic (As)	2024/10/29	<2.0		ug/L
			Leached Barium (Ba)	2024/10/29	<5.0		ug/L
			Leached Boron (B)	2024/10/29	<50		ug/L
			Leached Cadmium (Cd)	2024/10/29	<1.0		ug/L
			Leached Chromium (Cr)	2024/10/29	<7.0		ug/L
			Leached Cobalt (Co)	2024/10/29	<10		ug/L
			Leached Copper (Cu)	2024/10/29	<3.0		ug/L
			Leached Tin (Sn)	2024/10/29	<50		ug/L
			Leached Iron (Fe)	2024/10/29	<100		ug/L
			Leached Manganese (Mn)	2024/10/29	<3.0		ug/L
			Leached Mercury (Hg)	2024/10/29	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/10/29	<10		ug/L
			Leached Nickel (Ni)	2024/10/29	<6.0		ug/L
			Leached Lead (Pb)	2024/10/29	<1.0		ug/L
			Leached Selenium (Se)	2024/10/29	<1.0		ug/L
			Leached Uranium (U)	2024/10/29	<0.60		ug/L
			Leached Zinc (Zn)	2024/10/29	<5.0		ug/L
2586341	LI	LEACH. BLANK	Leached Fluoride (F)	2024/10/30	<1.0		mg/L
2586341	LI	Spiked Blank	Leached Fluoride (F)	2024/10/30		100	%
2586343	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/10/30	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/10/30	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/10/30	<0.20		mg/L
2586343	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/10/30		104	%
			Leached Nitrates (N-NO3-)	2024/10/30		102	%
			Leached Nitrate (N) and Nitrite(N)	2024/10/30		103	%

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C459837
Report Date: 2025/01/24

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your Project #: C459837

Attention: SOUSTRAITANCEQUE

BUREAU VERITAS CANADA (2019) INC.
MONTREAL
889 MONTEE DE LIESSE
VILLE ST-LAURENT, QC
CANADA H4T 1P5

Report Date: 2025/01/14
Report #: R3610921
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C488345
Received: 2024/10/22, 10:07

Sample Matrix: Solid
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Gen. Potential HNO3 Extr. - ARD	2	N/A	2025/01/07	BBY WI-00033	Auto Calc
Fizz Rating - ARD	2	2025/01/07	2025/01/07	BBY0SOP-00020 / BBY0SOP-00023	MEND 2009 1.20.1 m
Non Extractable Sulphur - ARD	2	N/A	2024/12/24	BBY WI-00033	Auto Calc
Net Neut. Potential (MABA-MPA HNO3)	2	N/A	2025/01/07	BBY WI-00033	Auto Calc
Modified ABA Neut. Potential - ARD	2	2025/01/07	2025/01/07	BBY0SOP-00020	MEND 2009 1.20.1
Neut. Potential Ratio - ARD	2	N/A	2025/01/07	BBY WI-00033	Auto Calc
Paste pH - ARD	2	2024/12/23	2024/12/20	BBY0SOP-00016	MEND 2009 1.20.1 m
Sulphate on HCL Extracts from ARD	2	N/A	2024/12/24	BBY6SOP-00017	SM 24 4500-SO42- E m
Sulphate on HNO3 Extracts from ARD	2	N/A	2024/12/24	BBY6SOP-00017	SM 24 4500-SO42- E m
HCl Extractable Sulphate Sulphur - ARD	2	N/A	2025/01/08	BBY ARD-00009	ASTM D2492-02 m
HNO3 Extractable Sulphate Sulphur - ARD	2	N/A	2025/01/08	BBY ARD-00009	ASTM D2492-02 m
Total Carbon & Sulfur in Mining Samples (1)	2	N/A	2024/11/20	CAL SOP-00243	LECO 203-821-463 m
Weight of Sample Received (charge/kg)	1	N/A	2024/11/20		
Weight of Sample Received	2	N/A	2024/11/20		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope

Your Project #: C459837

Attention: SOUSTRAITANCEQUE

BUREAU VERITAS CANADA (2019) INC.
MONTREAL
889 MONTEE DE LIESSE
VILLE ST-LAURENT, QC
CANADA H4T 1P5

Report Date: 2025/01/14
Report #: R3610921
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C488345
Received: 2024/10/22, 10:07

dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
14 Jan 2025 07:46:16

Please direct all questions regarding this Certificate of Analysis to:
Stephanie Rodriguez Camacho, Customer Solutions Representative
Email: Stephanie.Rodriguez@bureauveritas.com
Phone# (604) 734 7276

==========

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MODFIED ABA PKG - SULPHUR SPECIATION (SOLID)

Bureau Veritas ID		CZE404	CZE405		
Sampling Date					
	UNITS	NQ7050-TSMC-123449-GD	NQ7054-TSMC-123450-GD	RDL	QC Batch
Calculated Parameters					
NE Sulphur (S)	wt%	<0.02	<0.02	0.02	B593142
HNO3E Acid Generation Potential	Kg CaCO3/T	<0.3	<0.3	0.3	B593132
HNO3E Net Neut. Potential Modified ABA	Kg CaCO3/T	-0.200	-0.500	N/A	B593144
Neutralization Potential Ratio	N/A	NCP (1)	NCP (1)	0.1	B593074
Physical Properties					
Paste pH	pH Units	6.52	5.94	N/A	B646948
Mod. ABA Neutralization Potential	Kg CaCO3/T	-0.200	-0.500	N/A	B654145
Fizz Rating	N/A	NONE	NONE	N/A	B654132
Misc. Inorganics					
Total Sulphur (S)	%	<0.02	<0.02	0.02	B612779

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) NCP = non-calculable parameter

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SULPHUR SPECIATION (SOLID)

Bureau Veritas ID		CZE404	CZE405		
Sampling Date					
	UNITS	NQ7050-TSMC-123449-GD	NQ7054-TSMC-123450-GD	RDL	QC Batch
Calculated Parameters					
HCl Extractable SO4 Sulphur (S)	wt%	0.01	0.01	0.01	B593077
HNSO4 Sulphur (S)	wt%	<0.01	<0.01	0.01	B593149
Anions					
HCl Extracted Sulphate (SO4)	mg/L	2.66 (1)	3.48	0.50	B647786
HNO3E Sulphate (SO4)	mg/L	<0.50 (1)	<0.50	0.50	B647787

RDL = Reportable Detection Limit
(1) Matrix spike exceeds acceptance limits due to matrix interference.

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RESULTS OF CHEMICAL ANALYSES OF SOLID

Bureau Veritas ID		CZE404	CZE405	
Sampling Date				
	UNITS	NQ7050-TSMC-123449-GD	NQ7054-TSMC-123450-GD	QC Batch
Industrial				
Total Dry Weight + Tin	kg	0.8980	N/A	B613733
MISCELLANEOUS				
_ Dry Weight + Tin	kg	0.4250	0.4730	B613723
N/A = Not Applicable				

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B593077	RAE	QC Standard	HCl Extractable SO4 Sulphur (S)	2025/01/08		89	%	N/A
B593077	RAE	Method Blank	HCl Extractable SO4 Sulphur (S)	2025/01/08	<0.01		wt%	
B593077	RAE	RPD [CZE404-02]	HCl Extractable SO4 Sulphur (S)	2025/01/08	0		%	20
B593077	RAE	RPD	HCl Extractable SO4 Sulphur (S)	2025/01/08	0		%	20
			HCl Extractable SO4 Sulphur (S)	2025/01/10	0		%	20
			HCl Extractable SO4 Sulphur (S)	2025/01/09	0		%	20
B593149	RAE	QC Standard	HNSO4 Sulphur (S)	2025/01/08		85	%	N/A
B593149	RAE	Method Blank	HNSO4 Sulphur (S)	2025/01/08	<0.01		wt%	
B593149	RAE	RPD [CZE404-03]	HNSO4 Sulphur (S)	2025/01/08	NC		%	20
B593149	RAE	RPD	HNSO4 Sulphur (S)	2025/01/08	NC		%	20
B612779	ZI	QC Standard	Total Sulphur (S)	2024/11/20		87	%	75 - 125
B612779	ZI	Spiked Blank	Total Sulphur (S)	2024/11/20		99	%	80 - 120
B612779	ZI	Method Blank	Total Sulphur (S)	2024/11/20	<0.02		%	
B612779	ZI	RPD	Total Sulphur (S)	2024/11/20	0.47		%	30
B646948	WZ1	QC Standard	Paste pH	2024/12/20		100	%	N/A
B646948	WZ1	Spiked Blank	Paste pH	2024/12/20		100	%	97 - 103
B646948	WZ1	RPD [CZE404-01]	Paste pH	2024/12/20	0		%	N/A
B647786	JAV	Matrix Spike [CZE404-02]	HCl Extracted Sulphate (SO4)	2024/12/24		74 (1)	%	80 - 120
B647786	JAV	QC Standard	HCl Extracted Sulphate (SO4)	2024/12/24		89	%	N/A
B647786	JAV	Spiked Blank	HCl Extracted Sulphate (SO4)	2024/12/24		87	%	N/A
B647786	JAV	Method Blank	HCl Extracted Sulphate (SO4)	2024/12/24	<0.50		mg/L	
B647786	JAV	RPD [CZE404-02]	HCl Extracted Sulphate (SO4)	2024/12/24	9.3		%	20
B647786	JAV	RPD	HCl Extracted Sulphate (SO4)	2024/12/24	NC		%	20
			HCl Extracted Sulphate (SO4)	2024/12/24	1.8		%	20
B647787	JAV	Matrix Spike [CZE404-03]	HNO3E Sulphate (SO4)	2024/12/24		72 (1)	%	80 - 120
B647787	JAV	QC Standard	HNO3E Sulphate (SO4)	2024/12/24		85	%	N/A
B647787	JAV	Spiked Blank	HNO3E Sulphate (SO4)	2024/12/24		99	%	80 - 120
B647787	JAV	Method Blank	HNO3E Sulphate (SO4)	2024/12/24	<0.50		mg/L	
B647787	JAV	RPD [CZE404-03]	HNO3E Sulphate (SO4)	2024/12/24	NC		%	20
B647787	JAV	RPD	HNO3E Sulphate (SO4)	2024/12/24	NC		%	20
			HNO3E Sulphate (SO4)	2024/12/24	3.4		%	20
B654145	YKI	QC Standard	Mod. ABA Neutralization Potential	2025/01/07		99	%	N/A
B654145	YKI	Method Blank	Mod. ABA Neutralization Potential	2025/01/07	-1.50		Kg CaCO3/T	
B654145	YKI	RPD [CZE404-01]	Mod. ABA Neutralization Potential	2025/01/07	NC		%	N/A
B654145	YKI	RPD	Mod. ABA Neutralization Potential	2025/01/07	NC		%	N/A
			Mod. ABA Neutralization Potential	2025/01/07	2.3		%	N/A
			Mod. ABA Neutralization Potential	2025/01/07	1.5		%	N/A
			Mod. ABA Neutralization Potential	2025/01/07	33		%	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Bonnie Tsang, Team Lead (Statics), Acid Rock Drainage

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Mauro Oselin, P.Chem., QP, Scientific Specialist

Sandy Yuan, M.Sc., QP, Scientific Specialist

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Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your P.O. #: 3000001868
Your Project #: ARD
Site Location: DSO3
Your C.O.C. #: 153309

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015689
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C463730
Received: 2024/10/30, 09:00

Sample Matrix: Rock
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	4	N/A	N/A		
Fluoride (free) in soils	4	2024/11/08	2024/11/08	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	4	N/A	2024/11/13	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	8	N/A	2024/11/07	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	4	2024/11/04	2024/11/11	STL SOP-00024	MA100-Lixcom1.1 R1 m
Acid rain simulation leachate (EPA 1312)	4	2024/11/05	2024/11/06	STL SOP-00024	MA100-Lixcom1.1 R1 m
Total Ext. Metals (low level)-soil	4	2024/11/07	2024/11/08	STL SOP-00069	MA.200–Mét. 1.2 R7 m
Metals - Leached	4	2024/11/11	2024/11/12	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Metals - Leached	4	2024/11/07	2024/11/07	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Metals - Leached	4	2024/11/07	2024/11/08	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Nitrates (NO3-),Nitrites (NO2-) leached	4	N/A	2024/11/12	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	3	N/A	2024/11/06	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	4	N/A	2024/11/07	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	1	N/A	2024/11/08	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	4	2024/11/08	2024/11/08	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	4	N/A	2024/11/08	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	4	2024/11/05	2024/11/06	STL SOP-00024	MA100-Lixcom1.1 R1 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

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Your P.O. #: 3000001868
Your Project #: ARD
Site Location: DSO3
Your C.O.C. #: 153309

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/01/24
Report #: R3015689
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C463730
Received: 2024/10/30, 09:00
customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Cloe Christine
Project Manager
24 Jan 2025 15:07:47

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

TOTAL EXTRACTABLE METALS (ROCK)

Bureau Veritas ID		NS8263		NS8267	NS8296	NS8300		
Sampling Date		2024/10/26		2024/10/26	2024/10/26	2024/10/26		
COC Number		153309		153309	153309	153309		
	Units	TSMC-123904-T3N	RDL	TSMC-123905-T3N	TSMC-123906-F7	TSMC-123907-F7	RDL	QC Batch
% MOISTURE	%	9.9	N/A	13	9.9	9.8	N/A	N/A
METALS								
Total Extractable Silver (Ag)	mg/kg	<0.50	0.50	<0.50	<0.50	<0.50	0.50	2590592
Total Extractable Arsenic (As)	mg/kg	12	2.0	13	10	8.6	2.0	2590592
Total Extractable Barium (Ba)	mg/kg	<4.0	4.0	<4.0	59	63	4.0	2590592
Total Extractable Boron (B)	mg/kg	6.1	2.0	4.8	4.4	4.7	2.0	2590592
Total Extractable Cadmium (Cd)	mg/kg	<0.10	0.10	<0.10	0.21	0.16	0.10	2590592
Total Extractable Chromium (Cr)	mg/kg	2.4	1.0	2.3	26	25	1.0	2590592
Total Extractable Copper (Cu)	mg/kg	1.5	1.0	1.6	19	18	1.0	2590592
Total Extractable Cobalt (Co)	mg/kg	<1.0	1.0	<1.0	11	11	1.0	2590592
Total Extractable Tin (Sn)	mg/kg	<1.0	1.0	<1.0	<1.0	<1.0	1.0	2590592
Total Extractable Iron (Fe) †	mg/kg	110000	100	83000	78000	73000	10	2590592
Total Extractable Manganese (Mn)	mg/kg	180	2.0	190	<2.0	1300	2.0	2590592
Total Extractable Molybdenum (Mo)	mg/kg	0.57	0.50	0.57	1.5	1.3	0.50	2590592
Total Extractable Nickel (Ni)	mg/kg	0.95	0.50	1.0	21	21	0.50	2590592
Total Extractable Mercury (Hg)	mg/kg	0.039 (1)	0.015	<0.015 (1)	0.063 (1)	0.065 (1)	0.015	2590592
Total Extractable Lead (Pb)	mg/kg	1.8	1.0	1.4	7.4	6.8	1.0	2590592
Total Extractable Selenium (Se)	mg/kg	<0.50	0.50	<0.50	<0.50	<0.50	0.50	2590592
Total Extractable Uranium (U) †	mg/kg	<2.0	2.0	<2.0	<2.0	<2.0	2.0	2590592
Total Extractable Zinc (Zn)	mg/kg	<5.0	5.0	<5.0	42	39	5.0	2590592

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable
(1) The detection limit was raised due to instrumentation.

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METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NS8264		NS8265		NS8266		
Sampling Date		2024/10/26		2024/10/26		2024/10/26		
COC Number		153309		153309		153309		
	Units	TSMC-123904-T3N (TCLP)	QC Batch	TSMC-123904-T3N (SPLP 1312)	QC Batch	TSMC-123904-T3N (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2590248	<0.30	2590239	<0.30	0.30	2591901
Leached Arsenic (As)	ug/L	<2.0	2590248	<2.0	2590239	<2.0	2.0	2591901
Leached Barium (Ba)	ug/L	22	2590248	<5.0	2590239	<5.0	5.0	2591901
Leached Boron (B)	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Cadmium (Cd)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Chromium (Cr)	ug/L	<7.0	2590248	<7.0	2590239	<7.0	7.0	2591901
Leached Cobalt (Co)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Copper (Cu)	ug/L	<3.0	2590248	<3.0	2590239	<3.0	3.0	2591901
Leached Tin (Sn) †	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Iron (Fe)	ug/L	<100	2590248	<100	2590239	<100	100	2591901
Leached Manganese (Mn)	ug/L	73	2590248	18	2590239	10	3.0	2591901
Leached Mercury (Hg)	ug/L	<0.50	2590248	<0.50	2590239	<0.50	0.50	2591901
Leached Molybdenum (Mo)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Nickel (Ni)	ug/L	<6.0	2590248	<6.0	2590239	<6.0	6.0	2591901
Leached Lead (Pb)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Selenium (Se)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Uranium (U)	ug/L	0.78	2590248	<0.60	2590239	<0.60	0.60	2591901
Leached Zinc (Zn)	ug/L	<5.0	2590248	<5.0	2590239	<5.0	5.0	2591901

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NS8268		NS8294		NS8295		
Sampling Date		2024/10/26		2024/10/26		2024/10/26		
COC Number		153309		153309		153309		
	Units	TSMC-123905-T3N (TCLP)	QC Batch	TSMC-123905-T3N (SPLP 1312)	QC Batch	TSMC-123905-T3N (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2590248	<0.30	2590239	<0.30	0.30	2591901
Leached Arsenic (As)	ug/L	<2.0	2590248	<2.0	2590239	<2.0	2.0	2591901
Leached Barium (Ba)	ug/L	13	2590248	<5.0	2590239	<5.0	5.0	2591901
Leached Boron (B)	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Cadmium (Cd)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Chromium (Cr)	ug/L	<7.0	2590248	<7.0	2590239	<7.0	7.0	2591901
Leached Cobalt (Co)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Copper (Cu)	ug/L	<3.0	2590248	<3.0	2590239	<3.0	3.0	2591901
Leached Tin (Sn) †	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Iron (Fe)	ug/L	<100	2590248	<100	2590239	<100	100	2591901
Leached Manganese (Mn)	ug/L	92	2590248	14	2590239	30	3.0	2591901
Leached Mercury (Hg)	ug/L	<0.50	2590248	<0.50	2590239	<0.50	0.50	2591901
Leached Molybdenum (Mo)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Nickel (Ni)	ug/L	<6.0	2590248	<6.0	2590239	<6.0	6.0	2591901
Leached Lead (Pb)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Selenium (Se)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Uranium (U)	ug/L	0.73	2590248	<0.60	2590239	<0.60	0.60	2591901
Leached Zinc (Zn)	ug/L	<5.0	2590248	<5.0	2590239	<5.0	5.0	2591901

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NS8297		NS8298		NS8299		
Sampling Date		2024/10/26		2024/10/26		2024/10/26		
COC Number		153309		153309		153309		
	Units	TSMC-123906-F7 (TCLP)	QC Batch	TSMC-123906-F7 (SPLP 1312)	QC Batch	TSMC-123906-F7 (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2590248	<0.30	2590239	<0.30	0.30	2591901
Leached Arsenic (As)	ug/L	<2.0	2590248	<2.0	2590239	<2.0	2.0	2591901
Leached Barium (Ba)	ug/L	140	2590248	<5.0	2590239	25	5.0	2591901
Leached Boron (B)	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Cadmium (Cd)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Chromium (Cr)	ug/L	<7.0	2590248	<7.0	2590239	<7.0	7.0	2591901
Leached Cobalt (Co)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Copper (Cu)	ug/L	<3.0	2590248	<3.0	2590239	3.4	3.0	2591901
Leached Tin (Sn) †	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Iron (Fe)	ug/L	<100	2590248	730	2590239	1800	100	2591901
Leached Manganese (Mn)	ug/L	51	2590248	5.4	2590239	140	3.0	2591901
Leached Mercury (Hg)	ug/L	<0.50	2590248	<0.50	2590239	<0.50	0.50	2591901
Leached Molybdenum (Mo)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Nickel (Ni)	ug/L	<6.0	2590248	<6.0	2590239	<6.0	6.0	2591901
Leached Lead (Pb)	ug/L	<1.0	2590248	<1.0	2590239	1.3	1.0	2591901
Leached Selenium (Se)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Uranium (U)	ug/L	1.3	2590248	<0.60	2590239	0.73	0.60	2591901
Leached Zinc (Zn)	ug/L	7.7	2590248	<5.0	2590239	11	5.0	2591901

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NS8301		NS8302		NS8303		
Sampling Date		2024/10/26		2024/10/26		2024/10/26		
COC Number		153309		153309		153309		
	Units	TSMC-123907-F7 (TCLP)	QC Batch	TSMC-123907-F7 (SPLP 1312)	QC Batch	TSMC-123907-F7 (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2590248	<0.30	2590239	<0.30	0.30	2591901
Leached Arsenic (As)	ug/L	<2.0	2590248	<2.0	2590239	<2.0	2.0	2591901
Leached Barium (Ba)	ug/L	180	2590248	<5.0	2590239	23	5.0	2591901
Leached Boron (B)	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Cadmium (Cd)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Chromium (Cr)	ug/L	<7.0	2590248	<7.0	2590239	<7.0	7.0	2591901
Leached Cobalt (Co)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Copper (Cu)	ug/L	<3.0	2590248	<3.0	2590239	<3.0	3.0	2591901
Leached Tin (Sn) †	ug/L	<50	2590248	<50	2590239	<50	50	2591901
Leached Iron (Fe)	ug/L	<100	2590248	<100	2590239	1400	100	2591901
Leached Manganese (Mn)	ug/L	83	2590248	<3.0	2590239	100	3.0	2591901
Leached Mercury (Hg)	ug/L	<0.50	2590248	<0.50	2590239	<0.50	0.50	2591901
Leached Molybdenum (Mo)	ug/L	<10	2590248	<10	2590239	<10	10	2591901
Leached Nickel (Ni)	ug/L	6.6	2590248	<6.0	2590239	<6.0	6.0	2591901
Leached Lead (Pb)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Selenium (Se)	ug/L	<1.0	2590248	<1.0	2590239	<1.0	1.0	2591901
Leached Uranium (U)	ug/L	1.6	2590248	<0.60	2590239	<0.60	0.60	2591901
Leached Zinc (Zn)	ug/L	7.4	2590248	<5.0	2590239	10	5.0	2591901

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS (ROCK)

Bureau Veritas ID		NS8263	NS8267	NS8296	NS8300		
Sampling Date		2024/10/26	2024/10/26	2024/10/26	2024/10/26		
COC Number		153309	153309	153309	153309		
	Units	TSMC-123904-T3N	TSMC-123905-T3N	TSMC-123906-F7	TSMC-123907-F7	RDL	QC Batch
% MOISTURE	%	9.9	13	9.9	9.8	N/A	N/A
CONVENTIONALS							
Fluoride (F)	mg/kg	<1.0	<1.0	<1.0	<1.0	1.0	2590827
Sulfur (S)	% g/g	<0.010	<0.010	<0.010	<0.010	0.010	2590706
Nitrates (N-NO3-) †	mg/kg	<1.0	<1.0	<1.0	<1.0	1.0	2590832
Nitrites (N-NO2-) †	mg/kg	<0.20	<0.20	<0.20	<0.20	0.20	2590832

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NS8264		NS8265		
Sampling Date		2024/10/26		2024/10/26		
COC Number		153309		153309		
	Units	TSMC-123904-T3N (TCLP)	QC Batch	TSMC-123904-T3N (SPLP 1312)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2590031	<1.0	1.0	2590033
Leached Nitrites (N-NO2-)	mg/L	<0.20	2590964	<0.20	0.20	2590034
Leached Nitrates (N-NO3-)	mg/L	<0.20	2590964	N/A	0.20	N/A
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2590964	N/A	0.20	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		NS8266		NS8268		
Sampling Date		2024/10/26		2024/10/26		
COC Number		153309		153309		
	Units	TSMC-123904-T3N (CTEU-9)	QC Batch	TSMC-123905-T3N (TCLP)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2591898	<1.0	1.0	2590053
Leached Nitrites (N-NO2-)	mg/L	<0.20	2591902	<0.20	0.20	2590058
Leached Nitrates (N-NO3-)	mg/L	<0.20	2591902	<0.20	0.20	2590058
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2591902	<0.20	0.20	2590058

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		NS8294		NS8295		NS8297		
Sampling Date		2024/10/26		2024/10/26		2024/10/26		
COC Number		153309		153309		153309		
	Units	TSMC-123905-T3N (SPLP 1312)	QC Batch	TSMC-123905-T3N (CTEU-9)	QC Batch	TSMC-123906-F7 (TCLP)	RDL	QC Batch
CONVENTIONALS								
Leached Fluoride (F)	mg/L	<1.0	2590033	<1.0	2591898	<1.0	1.0	2590053
Leached Nitrites (N-NO2-)	mg/L	<0.20	2590034	<0.20	2591902	<0.20	0.20	2590058
Leached Nitrates (N-NO3-)	mg/L	N/A	N/A	<0.20	2591902	<0.20	0.20	2590058
Leached Nitrate (N) and Nitrite(N)	mg/L	N/A	N/A	<0.20	2591902	<0.20	0.20	2590058

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Bureau Veritas ID		NS8298		NS8299		
Sampling Date		2024/10/26		2024/10/26		
COC Number		153309		153309		
	Units	TSMC-123906-F7 (SPLP 1312)	QC Batch	TSMC-123906-F7 (CTEU-9)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2590033	<1.0	1.0	2591898
Leached Nitrites (N-NO2-)	mg/L	<0.20	2590034	<0.20	0.20	2591902
Leached Nitrates (N-NO3-)	mg/L	N/A	N/A	<0.20	0.20	2591902
Leached Nitrate (N) and Nitrite(N)	mg/L	N/A	N/A	<0.20	0.20	2591902

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		NS8301		NS8302		
Sampling Date		2024/10/26		2024/10/26		
COC Number		153309		153309		
	Units	TSMC-123907-F7 (TCLP)	QC Batch	TSMC-123907-F7 (SPLP 1312)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2590053	<1.0	1.0	2590033
Leached Nitrites (N-NO2-)	mg/L	<0.20	2590058	<0.20	0.20	2590034
Leached Nitrates (N-NO3-)	mg/L	<0.20	2590058	N/A	0.20	N/A
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2590058	N/A	0.20	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		NS8303		
Sampling Date		2024/10/26		
COC Number		153309		
	Units	TSMC-123907-F7 (CTEU-9)	RDL	QC Batch
CONVENTIONALS				
Leached Fluoride (F)	mg/L	<1.0	1.0	2591898
Leached Nitrites (N-NO2-)	mg/L	<0.20	0.20	2591902
Leached Nitrates (N-NO3-)	mg/L	<0.20	0.20	2591902
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	0.20	2591902

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TCLP-EPA 1311 (ROCK)

Bureau Veritas ID		NS8264	NS8268	NS8297	
Sampling Date		2024/10/26	2024/10/26	2024/10/26	
COC Number		153309	153309	153309	
	Units	TSMC-123904-T3N (TCLP)	TSMC-123905-T3N (TCLP)	TSMC-123906-F7 (TCLP)	QC Batch
Leachates					
Weight of sample (g)	n/a	20.2	20.0	20.0	2589134
pH of pre-test	n/a	<1.68	<1.68	1.74	2589134
pH end of leaching	n/a	4.97	4.97	4.98	2589134
Volume extracting fluid 1 (ml)	n/a	400	400	400	2589134
QC Batch = Quality Control Batch					

Bureau Veritas ID		NS8301	
Sampling Date		2024/10/26	
COC Number		153309	
	Units	TSMC-123907-F7 (TCLP)	QC Batch
Leachates			
Weight of sample (g)	n/a	20.1	2589134
pH of pre-test	n/a	<1.68	2589134
pH end of leaching	n/a	4.97	2589134
Volume extracting fluid 1 (ml)	n/a	400	2589134
QC Batch = Quality Control Batch			

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SPLP-EPA 1312 (ROCK)

Bureau Veritas ID		NS8265	NS8294	NS8298	NS8302	
Sampling Date		2024/10/26	2024/10/26	2024/10/26	2024/10/26	
COC Number		153309	153309	153309	153309	
	Units	TSMC-123904-T3N (SPLP 1312)	TSMC-123905-T3N (SPLP 1312)	TSMC-123906-F7 (SPLP 1312)	TSMC-123907-F7 (SPLP 1312)	QC Batch
Leachates						
Weight of sample (g)	n/a	25.1	25.1	25.0	25.1	2589200
Volume of extracting fluid (mL)	n/a	500	500	500	500	2589200
pH after 18 hours leaching	n/a	5.58	5.61	6.03	5.93	2589200
pH of extracting fluid	n/a	4.22	4.22	4.22	4.22	2589200

QC Batch = Quality Control Batch

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WATER LEACHATE-CTEU-9 (ROCK)

Bureau Veritas ID		NS8266	NS8295	NS8299	NS8303	
Sampling Date		2024/10/26	2024/10/26	2024/10/26	2024/10/26	
COC Number		153309	153309	153309	153309	
	Units	TSMC-123904-T3N (CTEU-9)	TSMC-123905-T3N (CTEU-9)	TSMC-123906-F7 (CTEU-9)	TSMC-123907-F7 (CTEU-9)	QC Batch
Leachates						
Weight of sample (g)	n/a	40.1	40.2	40.2	40.1	2588537
pH Deionized water	n/a	5.89	5.89	5.89	5.89	2588537
Date extraction fluid added	n/a	2024/11/04	2024/11/04	2024/11/04	2024/11/04	2588537
Date leaching terminated	n/a	2024/11/11	2024/11/11	2024/11/11	2024/11/11	2588537
Volume of extracting fluid (mL)	n/a	160	160	160	160	2588537
pH after 7 days of leaching	n/a	7.36	7.49	7.23	7.05	2588537

QC Batch = Quality Control Batch

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GENERAL COMMENTS

Revised report : As requested by the client, the reports for job C463730 will be divided. There will be one report for Goodwood location and another for DSO3 location. This report is for the DSO3 location.

TOTAL EXTRACTABLE METALS (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

CONVENTIONAL PARAMETERS-LAB LEACHATE (ROCK)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (ROCK)

pH du pre-test : veuillez noter que le résultat de l'échantillon NS8264, NS8268, NS8301, NS8305, NS8309 sont en dehors de la courbe de calibration, et à l'extérieur des limites de la linéarité aussi.

pH du pré-test: veuillez noter que le résultat des échantillons NS8297 sont en dehors de la courbe de calibration, mais à l'intérieur des limites de la linéarité.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2588537	MFL	Method Blank	pH Deionized water	2024/11/11	5.89		n/a
			Date extraction fluid added	2024/11/11	2024/11/04		n/a
			Date leaching terminated	2024/11/11	2024/11/11		n/a
			Volume of extracting fluid (mL)	2024/11/11	160		n/a
			pH after 7 days of leaching	2024/11/11	6.62		n/a
2589134	JNA	Method Blank	pH end of leaching	2024/11/06	4.95/2.88		n/a
			Volume extracting fluid 1 (ml)	2024/11/06	400		n/a
2589200	JNA	Method Blank	Volume of extracting fluid (mL)	2024/11/06	500		n/a
			pH after 18 hours leaching	2024/11/06	4.17		n/a
			pH of extracting fluid	2024/11/06	4.22		n/a
2590031	ZLI	LEACH. BLANK	Leached Fluoride (F)	2024/11/07	<1.0		mg/L
2590031	ZLI	Spiked Blank	Leached Fluoride (F)	2024/11/07		102	%
2590033	ZLI	LEACH. BLANK	Leached Fluoride (F)	2024/11/07	<1.0		mg/L
2590033	ZLI	Spiked Blank	Leached Fluoride (F)	2024/11/07		102	%
2590034	M2S	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/11/06	<0.20		mg/L
2590034	M2S	Spiked Blank	Leached Nitrites (N-NO2-)	2024/11/06		106	%
2590053	LI	LEACH. BLANK	Leached Fluoride (F)	2024/11/07	<1.0		mg/L
2590053	LI	Spiked Blank	Leached Fluoride (F)	2024/11/07		99	%
2590058	M2S	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/11/06	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/11/06	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/11/06	<0.20		mg/L
2590058	M2S	Spiked Blank	Leached Nitrites (N-NO2-)	2024/11/06		108	%
			Leached Nitrates (N-NO3-)	2024/11/06		104	%
			Leached Nitrate (N) and Nitrite(N)	2024/11/06		106	%
2590239	NET	LEACH. BLANK	Leached Silver (Ag)	2024/11/08	<0.30		ug/L
			Leached Arsenic (As)	2024/11/08	<2.0		ug/L
			Leached Barium (Ba)	2024/11/08	<5.0		ug/L
			Leached Boron (B)	2024/11/08	<50		ug/L
			Leached Cadmium (Cd)	2024/11/08	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/08	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/08	<10		ug/L
			Leached Copper (Cu)	2024/11/08	<3.0		ug/L
			Leached Tin (Sn)	2024/11/08	<50		ug/L
			Leached Iron (Fe)	2024/11/08	<100		ug/L
			Leached Manganese (Mn)	2024/11/08	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/08	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/08	<10		ug/L
			Leached Nickel (Ni)	2024/11/08	<6.0		ug/L
			Leached Lead (Pb)	2024/11/08	<1.0		ug/L
			Leached Selenium (Se)	2024/11/08	<1.0		ug/L
			Leached Uranium (U)	2024/11/08	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/08	<5.0		ug/L
2590239	NET	Spiked Blank	Leached Silver (Ag)	2024/11/08		107	%
			Leached Arsenic (As)	2024/11/08		107	%
			Leached Barium (Ba)	2024/11/08		112	%
			Leached Boron (B)	2024/11/08		106	%
			Leached Cadmium (Cd)	2024/11/08		110	%
			Leached Chromium (Cr)	2024/11/08		101	%
			Leached Cobalt (Co)	2024/11/08		97	%
			Leached Copper (Cu)	2024/11/08		96	%
			Leached Tin (Sn)	2024/11/08		114	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Iron (Fe)	2024/11/08		108	%
			Leached Manganese (Mn)	2024/11/08		103	%
			Leached Mercury (Hg)	2024/11/08		115	%
			Leached Molybdenum (Mo)	2024/11/08		112	%
			Leached Nickel (Ni)	2024/11/08		99	%
			Leached Lead (Pb)	2024/11/08		106	%
			Leached Selenium (Se)	2024/11/08		112	%
			Leached Uranium (U)	2024/11/08		116	%
			Leached Zinc (Zn)	2024/11/08		100	%
2590239	NET	Method Blank	Leached Silver (Ag)	2024/11/08	<0.30		ug/L
			Leached Arsenic (As)	2024/11/08	<2.0		ug/L
			Leached Barium (Ba)	2024/11/08	<5.0		ug/L
			Leached Boron (B)	2024/11/08	<50		ug/L
			Leached Cadmium (Cd)	2024/11/08	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/08	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/08	<10		ug/L
			Leached Copper (Cu)	2024/11/08	<3.0		ug/L
			Leached Tin (Sn)	2024/11/08	<50		ug/L
			Leached Iron (Fe)	2024/11/08	<100		ug/L
			Leached Manganese (Mn)	2024/11/08	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/08	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/08	<10		ug/L
			Leached Nickel (Ni)	2024/11/08	<6.0		ug/L
			Leached Lead (Pb)	2024/11/08	<1.0		ug/L
			Leached Selenium (Se)	2024/11/08	<1.0		ug/L
			Leached Uranium (U)	2024/11/08	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/08	<5.0		ug/L
2590248	NET	LEACH. BLANK	Leached Silver (Ag)	2024/11/07	<0.30		ug/L
			Leached Arsenic (As)	2024/11/07	<2.0		ug/L
			Leached Barium (Ba)	2024/11/07	<5.0		ug/L
			Leached Boron (B)	2024/11/07	<50		ug/L
			Leached Cadmium (Cd)	2024/11/07	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/07	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/07	<10		ug/L
			Leached Copper (Cu)	2024/11/07	<3.0		ug/L
			Leached Tin (Sn)	2024/11/07	<50		ug/L
			Leached Iron (Fe)	2024/11/07	<100		ug/L
			Leached Manganese (Mn)	2024/11/07	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/07	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/07	<10		ug/L
			Leached Nickel (Ni)	2024/11/07	<6.0		ug/L
			Leached Lead (Pb)	2024/11/07	<1.0		ug/L
			Leached Selenium (Se)	2024/11/07	<1.0		ug/L
			Leached Uranium (U)	2024/11/07	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/07	<5.0		ug/L
2590248	NET	Spiked Blank	Leached Silver (Ag)	2024/11/07		108	%
			Leached Arsenic (As)	2024/11/07		108	%
			Leached Barium (Ba)	2024/11/07		109	%
			Leached Boron (B)	2024/11/07		113	%
			Leached Cadmium (Cd)	2024/11/07		110	%
			Leached Chromium (Cr)	2024/11/07		103	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Cobalt (Co)	2024/11/07		96	%
			Leached Copper (Cu)	2024/11/07		94	%
			Leached Tin (Sn)	2024/11/07		111	%
			Leached Iron (Fe)	2024/11/07		109	%
			Leached Manganese (Mn)	2024/11/07		106	%
			Leached Mercury (Hg)	2024/11/07		105	%
			Leached Molybdenum (Mo)	2024/11/07		112	%
			Leached Nickel (Ni)	2024/11/07		95	%
			Leached Lead (Pb)	2024/11/07		102	%
			Leached Selenium (Se)	2024/11/07		107	%
			Leached Uranium (U)	2024/11/07		109	%
			Leached Zinc (Zn)	2024/11/07		98	%
2590248	NET	Method Blank	Leached Silver (Ag)	2024/11/07	<0.30		ug/L
			Leached Arsenic (As)	2024/11/07	<2.0		ug/L
			Leached Barium (Ba)	2024/11/07	<5.0		ug/L
			Leached Boron (B)	2024/11/07	<50		ug/L
			Leached Cadmium (Cd)	2024/11/07	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/07	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/07	<10		ug/L
			Leached Copper (Cu)	2024/11/07	<3.0		ug/L
			Leached Tin (Sn)	2024/11/07	<50		ug/L
			Leached Iron (Fe)	2024/11/07	<100		ug/L
			Leached Manganese (Mn)	2024/11/07	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/07	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/07	<10		ug/L
			Leached Nickel (Ni)	2024/11/07	<6.0		ug/L
			Leached Lead (Pb)	2024/11/07	<1.0		ug/L
			Leached Selenium (Se)	2024/11/07	<1.0		ug/L
			Leached Uranium (U)	2024/11/07	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/07	<5.0		ug/L
2590592	ST5	Spiked Blank	Total Extractable Silver (Ag)	2024/11/08		95	%
			Total Extractable Arsenic (As)	2024/11/08		98	%
			Total Extractable Barium (Ba)	2024/11/08		93	%
			Total Extractable Boron (B)	2024/11/08		109	%
			Total Extractable Cadmium (Cd)	2024/11/08		99	%
			Total Extractable Chromium (Cr)	2024/11/08		94	%
			Total Extractable Copper (Cu)	2024/11/08		95	%
			Total Extractable Cobalt (Co)	2024/11/08		97	%
			Total Extractable Tin (Sn)	2024/11/08		102	%
			Total Extractable Iron (Fe)	2024/11/08		94	%
			Total Extractable Manganese (Mn)	2024/11/08		95	%
			Total Extractable Molybdenum (Mo)	2024/11/08		100	%
			Total Extractable Nickel (Ni)	2024/11/08		93	%
			Total Extractable Mercury (Hg)	2024/11/08		87	%
			Total Extractable Lead (Pb)	2024/11/08		92	%
			Total Extractable Selenium (Se)	2024/11/08		99	%
			Total Extractable Uranium (U)	2024/11/08		92	%
			Total Extractable Zinc (Zn)	2024/11/08		94	%
2590592	ST5	Method Blank	Total Extractable Silver (Ag)	2024/11/08	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/11/08	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/11/08	<4.0		mg/kg

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Extractable Boron (B)	2024/11/08	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/11/08	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/11/08	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/11/08	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/11/08	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/11/08	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/11/08	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/11/08	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/11/08	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/11/08	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/11/08	<0.015		mg/kg
			Total Extractable Lead (Pb)	2024/11/08	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/11/08	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/11/08	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/11/08	<5.0		mg/kg
2590706	ZLI	QC Standard	Sulfur (S)	2024/11/08		92	%
2590706	ZLI	Method Blank	Sulfur (S)	2024/11/08	<0.010		% g/g
2590827	LI	Spiked Blank	Fluoride (F)	2024/11/08		104	%
2590827	LI	Method Blank	Fluoride (F)	2024/11/08	<1.0		mg/kg
2590832	GXL	Spiked Blank	Nitrates (N-NO3-)	2024/11/08		101	%
			Nitrites (N-NO2-)	2024/11/08		98	%
2590832	GXL	Method Blank	Nitrates (N-NO3-)	2024/11/08	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/11/08	<0.20		mg/kg
2590964	GXL	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/11/08	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/11/08	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/11/08	<0.20		mg/L
2590964	GXL	Spiked Blank	Leached Nitrites (N-NO2-)	2024/11/08		101	%
			Leached Nitrates (N-NO3-)	2024/11/08		103	%
			Leached Nitrate (N) and Nitrite(N)	2024/11/08		102	%
2591898	ZLI	LEACH. BLANK	Leached Fluoride (F)	2024/11/13	<1.0		mg/L
2591898	ZLI	Spiked Blank	Leached Fluoride (F)	2024/11/13		101	%
2591901	ANB	LEACH. BLANK	Leached Silver (Ag)	2024/11/12	<0.30		ug/L
			Leached Arsenic (As)	2024/11/12	<2.0		ug/L
			Leached Barium (Ba)	2024/11/12	<5.0		ug/L
			Leached Boron (B)	2024/11/12	<50		ug/L
			Leached Cadmium (Cd)	2024/11/12	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/12	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/12	<10		ug/L
			Leached Copper (Cu)	2024/11/12	<3.0		ug/L
			Leached Tin (Sn)	2024/11/12	<50		ug/L
			Leached Iron (Fe)	2024/11/12	<100		ug/L
			Leached Manganese (Mn)	2024/11/12	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/12	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/12	<10		ug/L
			Leached Nickel (Ni)	2024/11/12	<6.0		ug/L
			Leached Lead (Pb)	2024/11/12	<1.0		ug/L
			Leached Selenium (Se)	2024/11/12	<1.0		ug/L
			Leached Uranium (U)	2024/11/12	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/12	<5.0		ug/L
2591901	ANB	Spiked Blank	Leached Silver (Ag)	2024/11/12		100	%
			Leached Arsenic (As)	2024/11/12		103	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Barium (Ba)	2024/11/12		103	%
			Leached Boron (B)	2024/11/12		107	%
			Leached Cadmium (Cd)	2024/11/12		104	%
			Leached Chromium (Cr)	2024/11/12		98	%
			Leached Cobalt (Co)	2024/11/12		95	%
			Leached Copper (Cu)	2024/11/12		94	%
			Leached Tin (Sn)	2024/11/12		103	%
			Leached Iron (Fe)	2024/11/12		100	%
			Leached Manganese (Mn)	2024/11/12		102	%
			Leached Mercury (Hg)	2024/11/12		99	%
			Leached Molybdenum (Mo)	2024/11/12		102	%
			Leached Nickel (Ni)	2024/11/12		96	%
			Leached Lead (Pb)	2024/11/12		104	%
			Leached Selenium (Se)	2024/11/12		100	%
			Leached Uranium (U)	2024/11/12		120	%
			Leached Zinc (Zn)	2024/11/12		96	%
2591901	ANB	Method Blank	Leached Silver (Ag)	2024/11/12	<0.30		ug/L
			Leached Arsenic (As)	2024/11/12	<2.0		ug/L
			Leached Barium (Ba)	2024/11/12	<5.0		ug/L
			Leached Boron (B)	2024/11/12	<50		ug/L
			Leached Cadmium (Cd)	2024/11/12	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/12	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/12	<10		ug/L
			Leached Copper (Cu)	2024/11/12	<3.0		ug/L
			Leached Tin (Sn)	2024/11/12	<50		ug/L
			Leached Iron (Fe)	2024/11/12	<100		ug/L
			Leached Manganese (Mn)	2024/11/12	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/12	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/12	<10		ug/L
			Leached Nickel (Ni)	2024/11/12	<6.0		ug/L
			Leached Lead (Pb)	2024/11/12	<1.0		ug/L
			Leached Selenium (Se)	2024/11/12	<1.0		ug/L
			Leached Uranium (U)	2024/11/12	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/12	<5.0		ug/L
2591902	M2S	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/11/12	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/11/12	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/11/12	<0.20		mg/L
2591902	M2S	Spiked Blank	Leached Nitrites (N-NO2-)	2024/11/12		100	%
			Leached Nitrates (N-NO3-)	2024/11/12		99	%
			Leached Nitrate (N) and Nitrite(N)	2024/11/12		99	%

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Michelina Cinquino, Analyst II

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Table 1: ABA Test Results for project Tata Steel Minerals

BV Labs Sample No	Sample ID	Paste pH	Total S
	Units	pH Units	%
DAN906	NS8263-TSMC-123904-T3N	6.59	<0.02
DAN907	NS8267-TSMC-123905-T3N	6.32	<0.02
DAN908	NS8296-TSMC-123906-F7	7.55	0.02
DAN909	NS8300-TSMC-123907-F7	7.49	0.02
DAN910	NS8304-TSMC-123909-GD	7.06	0.04
DAN911	NS8308-TSMC-123910-GD	7.15	0.04
Detection Limits		*N/A*	*0.02*
Bureau Veritas SOP #		*BBY0SOP-00016*	*CAL SOP-00243*

Notes:

Price, W.A. 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. I

Price, WA. MEND Prediction Manual 1.20.1 (2009)EPA 600/2-78-054 p. 47-50

Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M. (March 1978), Field and Laboratory

NCP-non calculable parameter

References:

Acid Generation Potential = HNO3 Extractable Sulphide Sulphur*31.25

Fizz Rating - Reference method used is based on NP method.

HCl Extractable Sulphur and HNO3 Extractable Sulphur is based on a modified version of ASTM

HCl Extractable Sulphur is based on a modified version of ASTM Method D 2492-02

Mod. ABA Neutralization Potential - MEND Acid Rock Drainage Prediction Manual, MEND Projec

Net Neutralization Potential = (Modified ABA Neutralization Potential)-(Acid Generation Potential

Neutralization Potential Ratio = (Neutralization Potential)/(Acid Generation Potential)

Non Extractable Sulphur = (Total Sulphur)-(HCl Extractable Sulphate Sulphur)-(HNO3 Extractabl

Paste pH - Field and Laboratory Methods Applicable to Overburdens and Minesoils, (EPA 600 / 2

NC.

HCl Extractable Sulphate Sulphur wt%	HNO3 Extractable Sulphur wt%	Non Extractable Sulphur (by diff.) wt%	Acid Generation Potential Kg CaCO3/T
0.03	0.01	<0.02	0.3
0.03	<0.01	<0.02	<0.3
0.01	<0.01	<0.02	<0.3
0.01	<0.01	<0.02	<0.3
0.03	<0.01	<0.02	<0.3
0.03	<0.01	<0.02	<0.3
0.01	*0.01*	*0.02*	*0.3*
BBY ARD-00009	*BBY ARD-00009*	*BBY WI-00033*	*BBY WI-00033*

MEND Report 1.20.1

Methods Applicable to Overburden and Minesoils, Report EPA-600/2-78-054, U.S. National Technica

Method D 2492-02

ct 1.16.1b (pages 6.2-11 to 17), March 1991.
(HNO3 Extr))

le Sulphide Sulphur)
2-78-054, March 1978).

Mod. ABA Neutralization Potential Kg CaCO3/T	Fizz Rating N/A	Net Neutralization Potential Kg CaCO3/T	Neutralization Potential Ratio N/A
0.2	NONE	-0.1	0.7
0.2	NONE	0.2	NCP
2.2	NONE	2.2	NCP
1.7	NONE	1.7	NCP
0.3	NONE	0.3	NCP
0.2	NONE	0.2	NCP
N/A	*N/A*	*N/A*	*0.1*
BBY0SOP-00020	*SOP-00020 / BBY0SOP-0*	*BBY WI-00033*	*BBY WI-00033*

al Information Service Report PB-280 495 pages 46-47.

Your P.O. #: 3000001868
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 154914

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/02/07
Report #: R3018041
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C468610
Received: 2024/11/14, 09:00

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acid Base Accounting (Sobek modified) (1)	1	N/A	N/A		
Fluoride (free) in soils	1	2024/11/20	2024/11/21	STL SOP-00038	MA. 300-F 1.2m
Fluoride- Leached	1	N/A	2024/11/23	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	1	N/A	2024/11/25	STL SOP-00038	SM 24 4500-F m
Fluoride- Leached	1	N/A	2024/12/14	STL SOP-00038	SM 24 4500-F m
Water Leachate (CTEU - 9)	1	2024/12/07	2024/12/14	STL SOP-00024	MA100-Lixcom1.1 R3 m
Acid rain simulation leachate (EPA 1312)	1	2024/11/21	2024/11/22	STL SOP-00024	MA100-Lixcom1.1 R3 m
Total Ext. Metals (low level)-soil	1	2024/11/20	2024/11/21	STL SOP-00069	MA.200–Mét. 1.2 R9 m
Metals - Leached	1	2024/11/21	2024/11/22	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Metals - Leached	1	2024/11/22	2024/11/23	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Metals - Leached	1	2024/11/27	2024/11/27	STL SOP-00062	MA.200–Mét. 1.2 R9 m
Nitrates (NO3-),Nitrites (NO2-) leached	1	N/A	2024/11/22	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	1	N/A	2024/11/24	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-),Nitrites (NO2-) leached	1	N/A	2024/11/27	STL SOP-00014	MA.300–Ions 1.3 R6 m
Nitrates (NO3-), Nitrites (NO2-)-soil	1	2024/11/20	2024/11/20	STL SOP-00014	MA.300–Ions 1.3 R6 m
Sulfur-soils	1	N/A	2024/11/21	STL SOP-00028	MA. 310-CS 1.0 R3 m
Toxicity Charact. Leach. Proc.(EPA 1311)	1	2024/11/20	2024/11/21	STL SOP-00024	MA100-Lixcom1.1 R3 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the

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Your P.O. #: 3000001868
Your Project #: ARD
Site Location: Goodwood
Your C.O.C. #: 154914

Attention: TSMC Environnement

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

Report Date: 2025/02/07
Report #: R3018041
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C468610
Received: 2024/11/14, 09:00
customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Bureau Veritas
07 Feb 2025 08:46:20

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660
==========
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Bureau Veritas Job #: C468610
Report Date: 2025/02/07

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

TOTAL EXTRACTABLE METALS (SOIL)

Bureau Veritas ID		NU9672		
Sampling Date		2024/11/03		
COC Number		154914		
	Units	TSMC-123980-GD	RDL	QC Batch
% MOISTURE	%	4.5	N/A	N/A
METALS				
Total Extractable Silver (Ag)	mg/kg	<0.50	0.50	2595891
Total Extractable Arsenic (As)	mg/kg	7.5	2.0	2595891
Total Extractable Barium (Ba)	mg/kg	<4.0	4.0	2595891
Total Extractable Boron (B)	mg/kg	2.8	2.0	2595891
Total Extractable Cadmium (Cd)	mg/kg	<0.10	0.10	2595891
Total Extractable Chromium (Cr)	mg/kg	1.0	1.0	2595891
Total Extractable Copper (Cu)	mg/kg	2.5	1.0	2595891
Total Extractable Cobalt (Co)	mg/kg	3.4	1.0	2595891
Total Extractable Tin (Sn)	mg/kg	<1.0	1.0	2595891
Total Extractable Iron (Fe) †	mg/kg	98000	100	2595891
Total Extractable Manganese (Mn)	mg/kg	390	2.0	2595891
Total Extractable Molybdenum (Mo)	mg/kg	<0.50	0.50	2595891
Total Extractable Nickel (Ni)	mg/kg	0.75	0.50	2595891
Total Extractable Mercury (Hg)	mg/kg	<0.010	0.010	2595891
Total Extractable Lead (Pb)	mg/kg	1.7	1.0	2595891
Total Extractable Selenium (Se)	mg/kg	<0.50	0.50	2595891
Total Extractable Uranium (U) †	mg/kg	<2.0	2.0	2595891
Total Extractable Zinc (Zn)	mg/kg	<5.0	5.0	2595891

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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Bureau Veritas Job #: C468610
Report Date: 2025/02/07

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

METALS-LAB LEACHATE (SOIL)

Bureau Veritas ID		NU9689		NU9690		NU9691		
Sampling Date		2024/11/03		2024/11/03		2024/11/03		
COC Number		154914		154914		154914		
	Units	TSMC-123980-GD (TCLP)	QC Batch	TSMC-123980-GD (SPLP 1311)	QC Batch	TSMC-123980-GD (CTEU-9)	RDL	QC Batch
METALS								
Leached Silver (Ag) †	ug/L	<0.30	2596326	<0.30	2596978	<0.30	0.30	2598615
Leached Arsenic (As)	ug/L	<2.0	2596326	<2.0	2596978	<2.0	2.0	2598615
Leached Barium (Ba)	ug/L	8.7	2596326	<5.0	2596978	14	5.0	2598615
Leached Boron (B)	ug/L	<50	2596326	<50	2596978	100	50	2598615
Leached Cadmium (Cd)	ug/L	<1.0	2596326	<1.0	2596978	<1.0	1.0	2598615
Leached Chromium (Cr)	ug/L	<7.0	2596326	<7.0	2596978	<7.0	7.0	2598615
Leached Cobalt (Co)	ug/L	<10	2596326	<10	2596978	<10	10	2598615
Leached Copper (Cu)	ug/L	<3.0	2596326	<3.0	2596978	<3.0	3.0	2598615
Leached Tin (Sn) †	ug/L	<50	2596326	<50	2596978	<50	50	2598615
Leached Iron (Fe)	ug/L	<100	2596326	<100	2596978	130	100	2598615
Leached Manganese (Mn)	ug/L	120	2596326	58	2596978	41	3.0	2598615
Leached Mercury (Hg)	ug/L	<0.50	2596326	<0.50	2596978	<0.50	0.50	2598615
Leached Molybdenum (Mo)	ug/L	<10	2596326	<10	2596978	<10	10	2598615
Leached Nickel (Ni)	ug/L	<6.0	2596326	<6.0	2596978	<6.0	6.0	2598615
Leached Lead (Pb)	ug/L	<1.0	2596326	<1.0	2596978	<1.0	1.0	2598615
Leached Selenium (Se)	ug/L	<1.0	2596326	<1.0	2596978	<1.0	1.0	2598615
Leached Uranium (U)	ug/L	<0.60	2596326	<0.60	2596978	<0.60	0.60	2598615
Leached Zinc (Zn)	ug/L	<5.0	2596326	<5.0	2596978	<5.0	5.0	2598615

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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Bureau Veritas Job #: C468610
Report Date: 2025/02/07

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

CONVENTIONAL PARAMETERS (SOIL)

Bureau Veritas ID		NU9672		
Sampling Date		2024/11/03		
COC Number		154914		
	Units	**TSMC-123980-GD**	**RDL**	**QC Batch**
% MOISTURE	%	4.5	N/A	N/A
CONVENTIONALS				
Fluoride (F)	mg/kg	<1.0	1.0	2595608
Sulfur (S)	% g/g	<0.010	0.010	2596253
Nitrates (N-NO3-) †	mg/kg	3.6	1.0	2595610
Nitrites (N-NO2-) †	mg/kg	<0.20	0.20	2595610

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable

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CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Bureau Veritas ID		NU9689		NU9690		
Sampling Date		2024/11/03		2024/11/03		
COC Number		154914		154914		
	Units	TSMC-123980-GD (TCLP)	QC Batch	TSMC-123980-GD (SPLP 1311)	RDL	QC Batch
CONVENTIONALS						
Leached Fluoride (F)	mg/L	<1.0	2596427	<1.0	1.0	2597209
Leached Nitrites (N-NO2-)	mg/L	<0.20	2596429	<0.20	0.20	2597211
Leached Nitrates (N-NO3-)	mg/L	<0.20	2596429	N/A	0.20	N/A
Leached Nitrate (N) and Nitrite(N)	mg/L	<0.20	2596429	N/A	0.20	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		NU9691		
Sampling Date		2024/11/03		
COC Number		154914		
	Units	TSMC-123980-GD (CTEU-9)	RDL	QC Batch
CONVENTIONALS				
Leached Fluoride (F)	mg/L	<1.0	1.0	2605163
Leached Nitrites (N-NO2-)	mg/L	<0.20	0.20	2598751
Leached Nitrates (N-NO3-)	mg/L	0.56	0.20	2598751
Leached Nitrate (N) and Nitrite(N)	mg/L	0.56	0.20	2598751

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TCLP-EPA 1311 (SOIL)

Bureau Veritas ID		NU9689	NU9689	
Sampling Date		2024/11/03	2024/11/03	
COC Number		154914	154914	
	Units	TSMC-123980-GD (TCLP)	TSMC-123980-GD (TCLP) Lab-Dup	QC Batch
Leachates				
Weight of sample (g)	n/a	20.1	20.1	2595627
pH of pre-test	n/a	1.80	1.80	2595627
pH end of leaching	n/a	4.87	4.79	2595627
Volume extracting fluid 1 (ml)	n/a	400	400	2595627
QC Batch = Quality Control Batch				

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SPLP-EPA 1312 (SOIL)

Bureau Veritas ID		NU9690	
Sampling Date		2024/11/03	
COC Number		154914	
	Units	TSMC-123980-GD (SPLP 1311)	QC Batch
Leachates			
Weight of sample (g)	n/a	25.0	2596291
Volume of extracting fluid (mL)	n/a	500	2596291
pH after 18 hours leaching	n/a	9.05	2596291
pH of extracting fluid	n/a	4.16	2596291
QC Batch = Quality Control Batch			

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TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

WATER LEACHATE-CTEU-9 (SOIL)

Bureau Veritas ID		NU9691	
Sampling Date		2024/11/03	
COC Number		154914	
	Units	**TSMC-123980-GD (CTEU-9)**	**QC Batch**
Leachates			
Weight of sample (g)	n/a	40.1	2602534
pH Deionized water	n/a	6.02	2602534
Date extraction fluid added	n/a	2024/12/07	2602534
Date leaching terminated	n/a	2024/12/14	2602534
Volume of extracting fluid (mL)	n/a	160	2602534
pH after 7 days of leaching	n/a	7.52	2602534
QC Batch = Quality Control Batch			

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

GENERAL COMMENTS

Revised report: As per client request received by e-mail on January 15, 2025, Hg has been added to the parameters reported.

TOTAL EXTRACTABLE METALS (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

METALS-LAB LEACHATE (SOIL)

Please note that barium concentrations measured in leachates to simulate acid rain (SPLP EPA 1312) may be underestimated due to possible formation of a barium sulfate precipitate caused by the sulfuric acid present in the leaching solution. Please use the results with discretion.

CONVENTIONAL PARAMETERS-LAB LEACHATE (SOIL)

Reported detection limits are multiplied by dilution factors used for sample analysis.

TCLP-EPA 1311 (SOIL)

pH du pré-test de lixiviation: Veuillez noter que le résultat des échantillons NU9689 et NU9689 DUP1 sont en dehors de la courbe de calibration, mais à l'intérieur des limites de la linéarité.

Results relate only to the items tested.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2595608	ZLI	Spiked Blank	Fluoride (F)	2024/11/21		103	%
2595608	ZLI	Method Blank	Fluoride (F)	2024/11/21	<1.0		mg/kg
2595610	M2S	Spiked Blank	Nitrates (N-NO3-)	2024/11/20		102	%
			Nitrites (N-NO2-)	2024/11/20		100	%
2595610	M2S	Method Blank	Nitrates (N-NO3-)	2024/11/20	<1.0		mg/kg
			Nitrites (N-NO2-)	2024/11/20	<0.20		mg/kg
2595627	JNA	Method Blank	pH end of leaching	2024/11/21	4.89/2.86		n/a
			Volume extracting fluid 1 (ml)	2024/11/21	400		n/a
2595891	ST5	Spiked Blank	Total Extractable Silver (Ag)	2024/11/21		100	%
			Total Extractable Arsenic (As)	2024/11/21		105	%
			Total Extractable Barium (Ba)	2024/11/21		109	%
			Total Extractable Boron (B)	2024/11/21		123	%
			Total Extractable Cadmium (Cd)	2024/11/21		104	%
			Total Extractable Chromium (Cr)	2024/11/21		101	%
			Total Extractable Copper (Cu)	2024/11/21		101	%
			Total Extractable Cobalt (Co)	2024/11/21		105	%
			Total Extractable Tin (Sn)	2024/11/21		107	%
			Total Extractable Iron (Fe)	2024/11/21		105	%
			Total Extractable Manganese (Mn)	2024/11/21		99	%
			Total Extractable Molybdenum (Mo)	2024/11/21		101	%
			Total Extractable Nickel (Ni)	2024/11/21		102	%
			Total Extractable Mercury (Hg)	2024/11/21		117	%
			Total Extractable Lead (Pb)	2024/11/21		109	%
			Total Extractable Selenium (Se)	2024/11/21		105	%
			Total Extractable Uranium (U)	2024/11/21		108	%
			Total Extractable Zinc (Zn)	2024/11/21		103	%
2595891	ST5	Method Blank	Total Extractable Silver (Ag)	2024/11/21	<0.50		mg/kg
			Total Extractable Arsenic (As)	2024/11/21	<2.0		mg/kg
			Total Extractable Barium (Ba)	2024/11/21	<4.0		mg/kg
			Total Extractable Boron (B)	2024/11/21	<2.0		mg/kg
			Total Extractable Cadmium (Cd)	2024/11/21	<0.10		mg/kg
			Total Extractable Chromium (Cr)	2024/11/21	<1.0		mg/kg
			Total Extractable Copper (Cu)	2024/11/21	<1.0		mg/kg
			Total Extractable Cobalt (Co)	2024/11/21	<1.0		mg/kg
			Total Extractable Tin (Sn)	2024/11/21	<1.0		mg/kg
			Total Extractable Iron (Fe)	2024/11/21	<10		mg/kg
			Total Extractable Manganese (Mn)	2024/11/21	<2.0		mg/kg
			Total Extractable Molybdenum (Mo)	2024/11/21	<0.50		mg/kg
			Total Extractable Nickel (Ni)	2024/11/21	<0.50		mg/kg
			Total Extractable Mercury (Hg)	2024/11/21	<0.010		mg/kg
			Total Extractable Lead (Pb)	2024/11/21	<1.0		mg/kg
			Total Extractable Selenium (Se)	2024/11/21	<0.50		mg/kg
			Total Extractable Uranium (U)	2024/11/21	<2.0		mg/kg
			Total Extractable Zinc (Zn)	2024/11/21	<5.0		mg/kg
2596253	WPR	QC Standard	Sulfur (S)	2024/11/21		97	%
2596253	WPR	Method Blank	Sulfur (S)	2024/11/21	<0.010		% g/g
2596291	JNA	Method Blank	Volume of extracting fluid (mL)	2024/11/22	500		n/a
			pH after 18 hours leaching	2024/11/22	4.21		n/a
			pH of extracting fluid	2024/11/22	4.16		n/a
2596326	ST5	LEACH. BLANK	Leached Silver (Ag)	2024/11/22	<0.30		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Arsenic (As)	2024/11/22	<2.0		ug/L
			Leached Barium (Ba)	2024/11/22	<5.0		ug/L
			Leached Boron (B)	2024/11/22	<50		ug/L
			Leached Cadmium (Cd)	2024/11/22	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/22	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/22	<10		ug/L
			Leached Copper (Cu)	2024/11/22	<3.0		ug/L
			Leached Tin (Sn)	2024/11/22	<50		ug/L
			Leached Iron (Fe)	2024/11/22	<100		ug/L
			Leached Manganese (Mn)	2024/11/22	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/22	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/22	<10		ug/L
			Leached Nickel (Ni)	2024/11/22	<6.0		ug/L
			Leached Lead (Pb)	2024/11/22	<1.0		ug/L
			Leached Selenium (Se)	2024/11/22	<1.0		ug/L
			Leached Uranium (U)	2024/11/22	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/22	<5.0		ug/L
2596326	ST5	Spiked Blank	Leached Silver (Ag)	2024/11/22		105	%
			Leached Arsenic (As)	2024/11/22		106	%
			Leached Barium (Ba)	2024/11/22		105	%
			Leached Boron (B)	2024/11/22		105	%
			Leached Cadmium (Cd)	2024/11/22		103	%
			Leached Chromium (Cr)	2024/11/22		101	%
			Leached Cobalt (Co)	2024/11/22		100	%
			Leached Copper (Cu)	2024/11/22		100	%
			Leached Tin (Sn)	2024/11/22		111	%
			Leached Iron (Fe)	2024/11/22		102	%
			Leached Manganese (Mn)	2024/11/22		103	%
			Leached Mercury (Hg)	2024/11/22		104	%
			Leached Molybdenum (Mo)	2024/11/22		105	%
			Leached Nickel (Ni)	2024/11/22		99	%
			Leached Lead (Pb)	2024/11/22		102	%
			Leached Selenium (Se)	2024/11/22		112	%
			Leached Uranium (U)	2024/11/22		104	%
			Leached Zinc (Zn)	2024/11/22		99	%
2596326	ST5	Method Blank	Leached Silver (Ag)	2024/11/22	<0.30		ug/L
			Leached Arsenic (As)	2024/11/22	<2.0		ug/L
			Leached Barium (Ba)	2024/11/22	<5.0		ug/L
			Leached Boron (B)	2024/11/22	<50		ug/L
			Leached Cadmium (Cd)	2024/11/22	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/22	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/22	<10		ug/L
			Leached Copper (Cu)	2024/11/22	<3.0		ug/L
			Leached Tin (Sn)	2024/11/22	<50		ug/L
			Leached Iron (Fe)	2024/11/22	<100		ug/L
			Leached Manganese (Mn)	2024/11/22	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/22	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/22	<10		ug/L
			Leached Nickel (Ni)	2024/11/22	<6.0		ug/L
			Leached Lead (Pb)	2024/11/22	<1.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Selenium (Se)	2024/11/22	<1.0		ug/L
			Leached Uranium (U)	2024/11/22	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/22	<5.0		ug/L
2596427	KME	LEACH. BLANK	Leached Fluoride (F)	2024/11/23	<1.0		mg/L
2596427	KME	Spiked Blank	Leached Fluoride (F)	2024/11/23		97	%
2596429	M2S	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/11/21	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/11/21	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/11/21	<0.20		mg/L
2596429	M2S	Spiked Blank	Leached Nitrites (N-NO2-)	2024/11/22		99	%
			Leached Nitrates (N-NO3-)	2024/11/22		98	%
			Leached Nitrate (N) and Nitrite(N)	2024/11/22		99	%
2596978	ZZH	LEACH. BLANK	Leached Silver (Ag)	2024/11/23	<0.30		ug/L
			Leached Arsenic (As)	2024/11/23	<2.0		ug/L
			Leached Barium (Ba)	2024/11/23	<5.0		ug/L
			Leached Boron (B)	2024/11/23	<50		ug/L
			Leached Cadmium (Cd)	2024/11/23	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/23	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/23	<10		ug/L
			Leached Copper (Cu)	2024/11/23	<3.0		ug/L
			Leached Tin (Sn)	2024/11/23	<50		ug/L
			Leached Iron (Fe)	2024/11/23	<100		ug/L
			Leached Manganese (Mn)	2024/11/23	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/23	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/23	<10		ug/L
			Leached Nickel (Ni)	2024/11/23	<6.0		ug/L
			Leached Lead (Pb)	2024/11/23	<1.0		ug/L
			Leached Selenium (Se)	2024/11/23	<1.0		ug/L
			Leached Uranium (U)	2024/11/23	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/23	<5.0		ug/L
2596978	ZZH	Spiked Blank	Leached Silver (Ag)	2024/11/23		102	%
			Leached Arsenic (As)	2024/11/23		105	%
			Leached Barium (Ba)	2024/11/23		99	%
			Leached Boron (B)	2024/11/23		113	%
			Leached Cadmium (Cd)	2024/11/23		103	%
			Leached Chromium (Cr)	2024/11/23		100	%
			Leached Cobalt (Co)	2024/11/23		99	%
			Leached Copper (Cu)	2024/11/23		99	%
			Leached Tin (Sn)	2024/11/23		107	%
			Leached Iron (Fe)	2024/11/23		103	%
			Leached Manganese (Mn)	2024/11/23		101	%
			Leached Mercury (Hg)	2024/11/23		103	%
			Leached Molybdenum (Mo)	2024/11/23		105	%
			Leached Nickel (Ni)	2024/11/23		99	%
			Leached Lead (Pb)	2024/11/23		104	%
			Leached Selenium (Se)	2024/11/23		102	%
			Leached Uranium (U)	2024/11/23		102	%
			Leached Zinc (Zn)	2024/11/23		99	%
2596978	ZZH	Method Blank	Leached Silver (Ag)	2024/11/23	<0.30		ug/L
			Leached Arsenic (As)	2024/11/23	<2.0		ug/L
			Leached Barium (Ba)	2024/11/23	<5.0		ug/L

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Boron (B)	2024/11/23	<50		ug/L
			Leached Cadmium (Cd)	2024/11/23	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/23	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/23	<10		ug/L
			Leached Copper (Cu)	2024/11/23	<3.0		ug/L
			Leached Tin (Sn)	2024/11/23	<50		ug/L
			Leached Iron (Fe)	2024/11/23	<100		ug/L
			Leached Manganese (Mn)	2024/11/23	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/23	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/23	<10		ug/L
			Leached Nickel (Ni)	2024/11/23	<6.0		ug/L
			Leached Lead (Pb)	2024/11/23	<1.0		ug/L
			Leached Selenium (Se)	2024/11/23	<1.0		ug/L
			Leached Uranium (U)	2024/11/23	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/23	<5.0		ug/L
2597209	LI	LEACH. BLANK	Leached Fluoride (F)	2024/11/25	<1.0		mg/L
2597209	LI	Spiked Blank	Leached Fluoride (F)	2024/11/25		109	%
2597211	ZZH	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/11/23	<0.20		mg/L
2597211	ZZH	Spiked Blank	Leached Nitrites (N-NO2-)	2024/11/23		102	%
2597211	ZZH	Spiked Blank DUP	Leached Nitrites (N-NO2-)	2024/11/23		103	%
2598615	ST5	LEACH. BLANK	Leached Silver (Ag)	2024/11/27	<0.30		ug/L
			Leached Arsenic (As)	2024/11/27	<2.0		ug/L
			Leached Barium (Ba)	2024/11/27	<5.0		ug/L
			Leached Boron (B)	2024/11/27	<50		ug/L
			Leached Cadmium (Cd)	2024/11/27	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/27	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/27	<10		ug/L
			Leached Copper (Cu)	2024/11/27	<3.0		ug/L
			Leached Tin (Sn)	2024/11/27	<50		ug/L
			Leached Iron (Fe)	2024/11/27	<100		ug/L
			Leached Manganese (Mn)	2024/11/27	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/27	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/27	<10		ug/L
			Leached Nickel (Ni)	2024/11/27	<6.0		ug/L
			Leached Lead (Pb)	2024/11/27	<1.0		ug/L
			Leached Selenium (Se)	2024/11/27	<1.0		ug/L
			Leached Uranium (U)	2024/11/27	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/27	<5.0		ug/L
2598615	ST5	Spiked Blank	Leached Silver (Ag)	2024/11/27		103	%
			Leached Arsenic (As)	2024/11/27		101	%
			Leached Barium (Ba)	2024/11/27		104	%
			Leached Boron (B)	2024/11/27		94	%
			Leached Cadmium (Cd)	2024/11/27		102	%
			Leached Chromium (Cr)	2024/11/27		100	%
			Leached Cobalt (Co)	2024/11/27		97	%
			Leached Copper (Cu)	2024/11/27		95	%
			Leached Tin (Sn)	2024/11/27		106	%
			Leached Iron (Fe)	2024/11/27		101	%
			Leached Manganese (Mn)	2024/11/27		103	%
			Leached Mercury (Hg)	2024/11/27		97	%

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Leached Molybdenum (Mo)	2024/11/27		106	%
			Leached Nickel (Ni)	2024/11/27		96	%
			Leached Lead (Pb)	2024/11/27		105	%
			Leached Selenium (Se)	2024/11/27		100	%
			Leached Uranium (U)	2024/11/27		109	%
			Leached Zinc (Zn)	2024/11/27		95	%
2598615	ST5	Method Blank	Leached Silver (Ag)	2024/11/27	<0.30		ug/L
			Leached Arsenic (As)	2024/11/27	<2.0		ug/L
			Leached Barium (Ba)	2024/11/27	<5.0		ug/L
			Leached Boron (B)	2024/11/27	<50		ug/L
			Leached Cadmium (Cd)	2024/11/27	<1.0		ug/L
			Leached Chromium (Cr)	2024/11/27	<7.0		ug/L
			Leached Cobalt (Co)	2024/11/27	<10		ug/L
			Leached Copper (Cu)	2024/11/27	<3.0		ug/L
			Leached Tin (Sn)	2024/11/27	<50		ug/L
			Leached Iron (Fe)	2024/11/27	<100		ug/L
			Leached Manganese (Mn)	2024/11/27	<3.0		ug/L
			Leached Mercury (Hg)	2024/11/27	<0.50		ug/L
			Leached Molybdenum (Mo)	2024/11/27	<10		ug/L
			Leached Nickel (Ni)	2024/11/27	<6.0		ug/L
			Leached Lead (Pb)	2024/11/27	<1.0		ug/L
			Leached Selenium (Se)	2024/11/27	<1.0		ug/L
			Leached Uranium (U)	2024/11/27	<0.60		ug/L
			Leached Zinc (Zn)	2024/11/27	<5.0		ug/L
2598751	SXU	LEACH. BLANK	Leached Nitrites (N-NO2-)	2024/11/27	<0.20		mg/L
			Leached Nitrates (N-NO3-)	2024/11/27	<0.20		mg/L
			Leached Nitrate (N) and Nitrite(N)	2024/11/27	<0.20		mg/L
2598751	SXU	Spiked Blank	Leached Nitrites (N-NO2-)	2024/11/27		102	%
			Leached Nitrates (N-NO3-)	2024/11/27		101	%
			Leached Nitrate (N) and Nitrite(N)	2024/11/27		102	%
2602534	JNA	Method Blank	pH Deionized water	2024/12/14	6.02		n/a
			Date extraction fluid added	2024/12/14	2024/12/07		n/a
			Date leaching terminated	2024/12/14	2024/12/14		n/a
			Volume of extracting fluid (mL)	2024/12/14	160		n/a
			pH after 7 days of leaching	2024/12/14	7.21		n/a
2605163	KME	LEACH. BLANK	Leached Fluoride (F)	2024/12/14	<1.0		mg/L
2605163	KME	Spiked Blank	Leached Fluoride (F)	2024/12/14		99	%

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Bureau Veritas Job #: C468610
Report Date: 2025/02/07

TATA STEEL MINERALS CANADA
Client Project #: ARD
Site Location: Goodwood
Your P.O. #: 3000001868
Sampler Initials: GEO

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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Membre OCQ#2324-095
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Table 1: ABA Test Results for project TATA STEEL

BV Labs Sample No	Sample ID	Paste pH	Total S
	Units	pH Units	%
DAV623	NU9672-TSMC-123980-GD	6.58	<0.02
Detection Limits		*N/A*	*0.02*
Bureau Veritas SOP #		*BBY0SOP-00016*	*CAL SOP-00243*

Notes:

Price, W.A. 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. M
Price, WA. MEND Prediction Manual 1.20.1 (2009)EPA 600/2-78-054 p. 47-50
Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M. (March 1978), Field and Laboratory
NCP-non calculable parameter

References:

Acid Generation Potential = HNO3 Extractable Sulphide Sulphur*31.25
Fizz Rating - Reference method used is based on NP method.
HCl Extractable Sulphur and HNO3 Extractable Sulphur is based on a modified version of ASTM
HCl Extractable Sulphur is based on a modified version of ASTM Method D 2492-02
Mod. ABA Neutralization Potential - MEND Acid Rock Drainage Prediction Manual, MEND Projec
Net Neutralization Potential = (Modified ABA Neutralization Potential)-(Acid Generation Potential
Neutralization Potential Ratio = (Neutralization Potential)/(Acid Generation Potential)
Non Extractable Sulphur = (Total Sulphur)-(HCl Extractable Sulphate Sulphur)-(HNO3 Extractabl
Paste pH - Field and Laboratory Methods Applicable to Overburdens and Minesoils, (EPA 600 / 2

NC.

HCl Extractable Sulphate Sulphur wt%	HNO3 Extractable Sulphur wt%	Non Extractable Sulphur (by diff.) wt%	Acid Generation Potential Kg CaCO3/T
0.01	<0.01	<0.02	<0.3
0.01	*0.01*	*0.02*	*0.3*
BBY ARD-00009	*BBY ARD-00009*	*BBY WI-00033*	*BBY WI-00033*

MEND Report 1.20.1

Methods Applicable to Overburden and Minesoils, Report EPA-600/2-78-054, U.S. National Technica

Method D 2492-02

t 1.16.1b (pages 6.2-11 to 17), March 1991.
(HNO3 Extr))

e Sulphide Sulphur)
2-78-054, March 1978).

Mod. ABA Neutralization Potential Kg CaCO3/T	Fizz Rating N/A	Net Neutralization Potential Kg CaCO3/T
-0.3	NONE	-0.3
N/A	*N/A*	*N/A*
BBY0SOP-00020	*)SOP-00020 / BBY0SOP-0*	*BBY WI-00033*

ıl Information Service Report PB-280 495 pages 46-47.

Neutralization Potential Ratio **N/A**
NCP
0.1
BBY WI-00033

Appendix X. Geotechnical inspection report

CONFIDENTIAL

TECHNICAL MEMORANDUM

DATE March 3, 2025 **Reference No.** 001-CA0037100.2914-TM-Rev0

TO Pallav Sinha, Manager – Environment
Tata Steel Minerals Canada Ltd.

CC

FROM Jean-Sébastien Houle, Eng. **EMAIL jean.sebastien.houle@wsp.com**

2024 GEOTECHNICAL INSPECTION, GOODWOOD SITE (QUEBEC)

1.0 INTRODUCTION

Tata Steel Minerals Canada Ltd mandated WSP Canada Inc. (WSP) for the yearly geotechnical inspection of the Goodwood mine site (Quebec). The inspection aimed at observing the geotechnical conditions of the open pit, the waste rock dump, overburden dump and sedimentation pond.

1.1 Limitations

This mandate is not a review of the geotechnical practices of the operations at this site, nor is it a check between previous recommendations and/or design criteria. The mandate is not a due diligence or an audit. The mandate is to note observations and record them in an inspection report.

1.2 Site Visit

Jean-Sébastien Houle, engineer at WSP, conducted the geotechnical inspection on July 11, 2024. He was accompanied by a shift boss for the inspection of the overburden dump and the open pit, and by Jean-François Dion, environmental coordinator for the inspection of the waste rock dump and sedimentation pond.

2.0 SITE DESCRIPTIONS

The following sections present a summary of the design geometry of each infrastructure as well as the dimensions observed at the time of the visit. Figure 1 presents those infrastructures based on the November 2022 Lidar. The 2023 Lidar could not be used for this figure due to its poor resolution.

2.1 Open pit

The topography around the open pit varies from 773 metres to the north to 700 metres to the south.

According to WSP's 2017 report, the bench geometry used in the open pit consists of 10-metre-high benches (berm intervals) with a face angle of 70° with 4.75-metre-wide berms (Journaux, 2015) which create an Inter-ramp angle (IRA) of 50°.

At the time of the visit, the deepest part of the pit was at an elevation of 713 metres with a final slope to the north of approximately 60 metres deep. Its final depth is expected to be 130 metres (elevation 643 metres).

The other final slopes (i.e., east, south and west) show a total height of 20 metres or less.

2.2 Waste Rock Dump (WRD)

The topography around waste rock dump varies from 740 metres to the north (same in the southern part of the pit) to 706 metres to the south near the sedimentation pond.

The design bench geometry of the WRD consists of 15-metre-high benches (berm intervals) with a face angle of 34 degrees with 10-metre-wide berms. This results in an overall slope angle of approximately 25 degrees.

At the time of the visit, the dump elevation was at 756 metres. This forms the highest slope – south slope (facing southwest) – with a height of approximately 50 metres (measured from the southern toe). The maximum design elevation of the WRD is 760 metres.

The lower berm (about 15 metres from the toe) is only 7 metres to 8 metres wide and the upper berm is only 5 metres to 6 metres wide. This results in an overall slope angle that is slightly steeper: approximately 26 to 27 degrees.

2.3 Overburden Dump (OVB)

The topography around the overburden dump varies from 785 metres to the north to 745 metres to the south, near the main access close to the open pit.

The design bench geometry of the OVB consists of 15-metre-high benches (berm intervals) with a face angle of 34 degrees with 10-metre-wide berms. This also results in an overall slope angle of approximately 25 degrees.

At the time of the visit, the highest slope is the one at the most southern tip at approximately 18 metres with a 10-metre-wide berm 9 metres below the summit and a 6-metre-wide berm about 4 metres from the toe. The overall angle is approximately 25 degrees or less.

2.4 Sedimentation Pond

The topography around the sedimentation pond varies from 698 metres to the northeast to 681 metres to the southwest, at the toe of the dyke.

The sedimentation was built in 2017 and subject to repair in 2021 and 2022 including specific repair work on the bituminous membrane. According to the engineering repair design, the bituminous membrane was to be covered with granular material. Although this cover work has been completed to date, it could still be acceptable if adequate inspection is carried out on a yearly basis to ensure the integrity of the membrane.

Due to the scarcity of good quality riprap, the bituminous membrane is exposed (not covered) over approximately 50% of its surface.

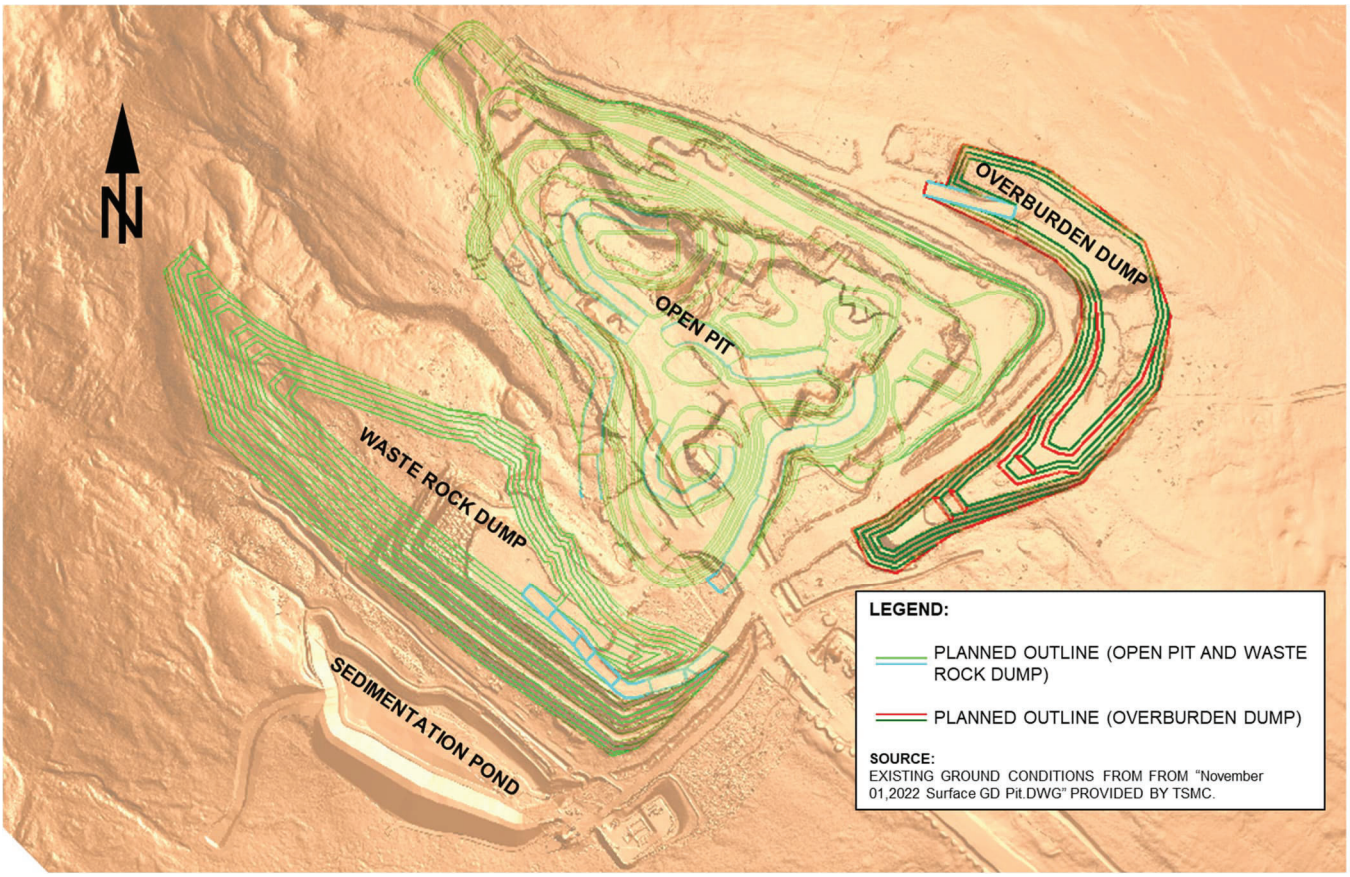


Figure 1: Site Plan (2022 Lidar and 2024 Mine, Waste Rock Dump and Overburden Dump Designs, TSMC, 2024)

3.0 OBSERVATIONS AND CONCERNS

The main observations, concerns and comments collected during the inspection visit are presented in Table 1.

Photos supporting the concerns are presented in appendix A.

Table 1: Main Observations, Concerns and Comments

Area	Main Observations, Concerns and Comments	Photo #
Open Pit	**Final walls and catchment berms on the north slope:** ▪ At the time of WSP's inspection, mining operations are now 50 metres deep with respect to the natural terrain. ▪ Presence of eroded fine material. **Level of concern:** moderate	2 and 6

Area	Main Observations, Concerns and Comments	Photo #
Open Pit	**Water inflows:** ▪ Local water inflow is eroding the benched and hauling sediments toward the pit and the berms. **Level of concern:** low	3 and 4
Open Pit	**Design:** ▪ The geotechnical design used in the current mine plan was primarily for the technical and economic assessment of the pit and to obtain the necessary permits. In 2023, TSMC carried out some geotechnical and hydrogeological investigations around the current open pit boundary, but this work was not reviewed by a competent engineer. Furthermore, the recommended additional work (e.g., geotechnical drilling, installation of thermistors) was never fully completed. **Level of concern:** moderate	
Waste Rock Dump	**General:** ▪ The material is composed of moderately hard rock to soft weathered rock (soil like) conducive to differential settlements. **Level of concern:** low	7
Waste Rock Dump	**South slope:** ▪ Multiple small sloughing zones probably due to material saturation. ▪ There is local evidence of water erosion producing sediments at the toe of the slope toward the ditch, probably due to a poor water management strategy at the summit (plateau). Over time, the sediment accumulations will need to be cleaned out of the ditch. ▪ The width of the berms varies only from 5 to 8 metres, whereas the design calls for a width of 10 metres and the overall slope angle is approximately 27 degrees. **Level of concern:** moderate	8, 9 and 10
Waste Rock Dump	**West Slope:** ▪ Water catchment ditch completed in 2022 or 2023. ▪ There is local evidence of water erosion producing sediments at the toe of the slope toward the ditch probably due to a poor water management strategy at the summit (plateau). Over time, the sediment accumulations will have to be cleaned out of the ditch. **Level of concern:** low	

Area	Main Observations, Concerns and Comments	Photo #
Overburden Dump	**General:** ▪ Taluses are generally in good shape with some localized erosion zones due to water overflow from the summit. This is probably due to a poor water management strategy on the flat plateau (dumping areas). **Level of concern:** low	11 and 12
Sedimentation Pond	**Exposed bituminous membrane:** ▪ Following the repair works in 2022 and 2023, the bituminous membrane remained exposed (not covered with riprap). ▪ This situation could be conducive to tearing during the thaw period, for example through the displacement of large pieces of ice. ▪ Considering the difficulty to supply good quality rip rap, WSP deemed this situation acceptable with a proper inspection program. **Level of concern:** moderate	14 and 15
Sedimentation Pond	**Rip rap quality on slopes and spillway:** ▪ The riprap used in some areas is composed of moderately weathered rock, which is not ideal to protect the underlying element (e.g., bituminous membrane). ▪ Some areas show minor settlements, especially along what could be observed at the water level during thaw period. **Level of concern:** low	13, 16 and 17
Sedimentation Pond	**Wet zone at the toe of the pond** ▪ The wet zone is located at about one third of the distance from the east end. Can show some water puddling after periods of rain. ▪ It is not clear if that zone is caused by surface water travelling under the pond or from leakage in the pond. **Level of concern:** moderate	18

4.0 RECOMMENDED ACTIONS

Following its observations, WSP recommends the actions listed in Table 2.

It is also recommended that TSMC implement a Ground Control and Monitoring Program (GCMP) that documents the mine's geotechnical risks and mitigation measures. A GCMP is a proven tool for reducing ground failures that lead to injuries and fatalities of mine workers.

Table 2: Recommended Actions

Area	Recommended Actions
General	**Survey:** ▪ Perform an annual survey (e.g., LiDar or InSAR) of the entire Goodwood site. ▪ Properly observe the geometry of the infrastructure thus enabling a comparison to the designs, it is recommended that the survey be conducted using a density of at least 2.5 points per square metre. For example, the survey titled “November 1, 2022, surface GD pit” provided an acceptable resolution. ▪ Consider conducting periodic drone surveys to check the occurrence of tension cracks and bulging of the bench faces, and any major settlement (or deformation of the crest). ▪ Perform a conformance review of the pit walls and dumps to validate that the design criteria are respected.
Open Pit	**Design:** ▪ Note that the exposed bench conditions do not support the implementation of double benches. Continue with single benching as per the design. ▪ WSP’s 2017 report recommended using a geometry of 6.5 m-wide berm for a 10 m high bench. This configuration results in an IRA of 45° which is 5 degrees shallower than what is currently being implemented following Journaux 2015 recommendations. ▪ TSMC should review slope performances, deformations and water pressure to confirm overall stability as well as bench efficiency to contain rock falls.
Open Pit	**Monitoring:** ▪ As stated in WSP’s 2017 geotechnical report, “Extensive monitoring of pit slopes and ongoing commitment to data collection throughout the life of the project is required to ensure design appropriateness and validate for assumed design parameters.” ▪ It is important that the monitoring be implemented soon (short term) to provide a baseline of conditions when the pit is deeper.
Open Pit	**Water management around the pit limits:** ▪ Ensure that all water from the topography is diverted and collected in a ditch away from the open pit.
Open Pit	**Berms:** ▪ Plan a larger berm (or step in) if the berms are more than 25% full of material or if their effective width is less than 4.9 metres wide (or 75% of the planned 6.5 metres wide).
Open Pit	**Design:** ▪ Review and update the geological and geotechnical model if required following receipt of the 2023 investigation data.

Area	Recommended Actions
Waste Rock Dump	**General:** ▪ Given that the current slope is steeper than the design, an updated stability assessment for long-term conditions (closure) should be undertaken using an updated survey. ▪ Consider completing a classification of the waste dumps using the Waste Dump and Stockpile Hazard Class (WHC) developed by Hawley and Cunning (2017). ▪ As stated in WSP's 2017 report, "A program should be instituted for waste dump stability monitoring for operations. This would include daily observations of the waste dumps and evaluating of performance."
Waste Rock Dump	**Resurgence and erosion at the foot of the southern slope:** ▪ Monitor the evolution and develop intakes to the existing ditches if necessary.
Waste Rock Dump	**Monitoring:** ▪ Implement a monitoring program based on the WHC (Hawley and Cunning, 2017).
Waste Rock Dump	**Southern and eastern slopes:** ▪ Document (photos and report) the evolution of surface drops and ensure that the safety berms are adequate. ▪ Slope profiling is to be planned according to the specifications of the 2017 WSP geotechnical study when the overlying slope has reached its final geometry. ▪ Considering the current slope is steeper than the design, TMSC may have to consider a step-in of the top of the WRD or a step-out of the toe, should its permits allow.
Waste Rock Dump	**Summit (plateau):** ▪ During deposition of the waste rock, avoid dumping directly at the crest, which can affect the slope stability and impact the safety of the operations. ▪ Establish a grading for the dump with the increase of about +2% towards the dump crest, to eliminate pounding water near the crest.
Overburden dump	**In inactive areas:** ▪ Improve the levelling of the crest (plateau) to prevent water from flowing down slopes. ▪ Consider the construction/installation of a ditch lined with an erosion protection material (e.g.: stonework) where necessary.
Overburden dump	**In active areas:** Reshape/level the summit (plateau) away from the slopes (e.g., towards the entrance/ramp).

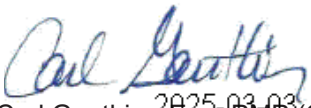
Area	Recommended Actions
Sedimentation Pond	**Interior slopes:** ▪ Inspect the slope conditions and record any potential damage to the bituminous membrane. ▪ Add good quality riprap when material is reasonably available.
Sedimentation Pond	**Exterior slopes:** ▪ Investigate the wet area forming at the toe of the dike (survey), record and compare the water level in the pond, use tracing fluids if necessary and monitor the groundwater level and quality at the same time.

5.0 CONCLUSION

WSP's engineer performed a geotechnical inspection of the Goodwood site in July 2024. This technical memorandum summarizes his observations and concerns and provides recommended actions going forward.

Jean-Sébastien Houle, Eng. (OIQ #129263)
Lead Geotechnical Engineer
Geotechnical inspection

Carl Gravel, Eng. M.Sc.A (OIQ #5007031)
Principal Rock Mechanics Engineer
Open pit, waste rock dump and overburden dump



Carl Gauthier, Eng. PMP (OIQ #111186)
Mining Environment Director
Sedimentation pond

JSH/CG/CG/ba

Attachments: Appendix A – Site Inspection Photos

REFERENCES

Hawley, M. & Cunning, J. (2017). Guidelines for Mine Waste Dump and Stockpile Design. CSIRO Publishing, Australia.

Journeaux Ass. (2015, Feb.) Design of pit slopes, DSO iron ore project, Tata Steel Minerals Canada, Schefferville, Qc and Newfoundland-Labrador Report No. L-13-1668, 70 p. + appendices.

WSP. (2017, June) Goodwood Pit, Geotechnical Design Parameters for Life-Of-Mine Open Pit and Waste Dump, report prepared for Tata Steel Mineral Canada Ltd, WSP ref.# 131-21244-00_RPT-02_R0, 27 pages and appendices.

APPENDIX A

Site Inspection Photos

APPENDIX A – SITE INSPECTION PHOTOS

WSP REF. 001-CA0037100.2914-TM-REV0

2024 GEOTECHNICAL INSPECTION, GOODWOOD SITE (QUÉBEC)

March 2025

PHOTO 1 – East Slope (final; background) - Minor sloughing at the crest of each of the bench faces. Local material accumulated on the bench. Looking southeast

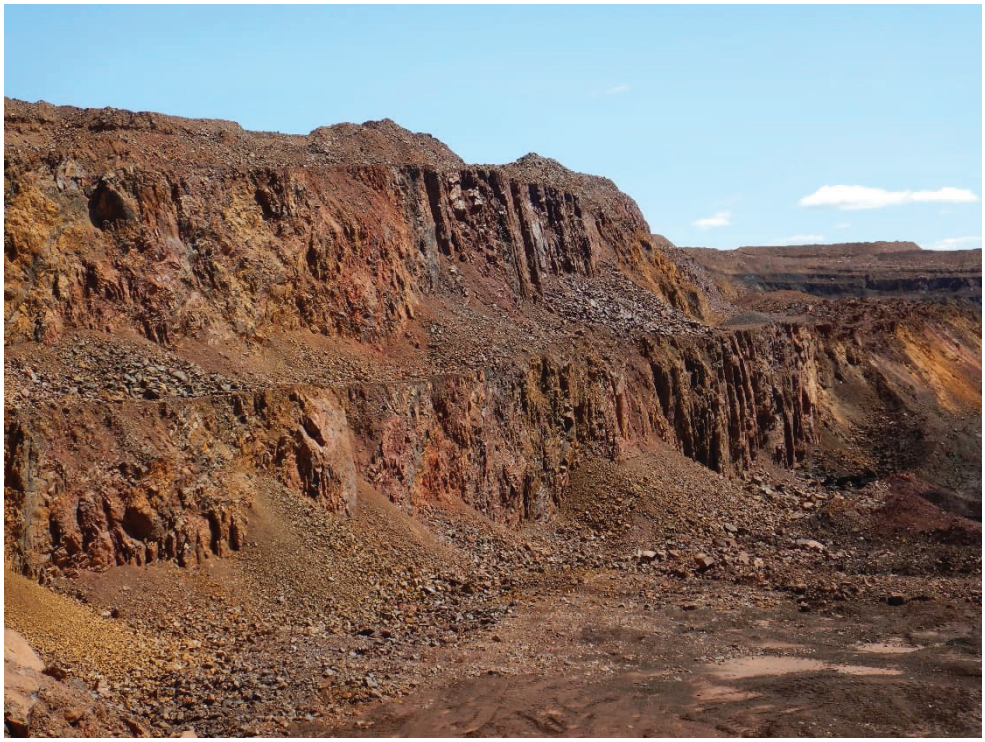


PHOTO 2 – North Slope (final) - Eastern portion of the 1st and 2nd catch bench moderately to completely filled with material (weathered rock and overburden). Looking east-northeast

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TATA STEEL MINERALS CANADA LTD

PROJECT

2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

CONSULTANT

wsp

YYYY-MM-DD	2024-11-29
PREPARED	J.-S. HOULE, ING.
DESIGN	J.-S. HOULE, ING.
REVIEW	C.GRAVEL, ING.
APPROVED	C. GAUTHIER, ING.

TITLE

OPEN PIT

PROJECT No	REV	APPENDIX
CA0037100.2914	0	A-1

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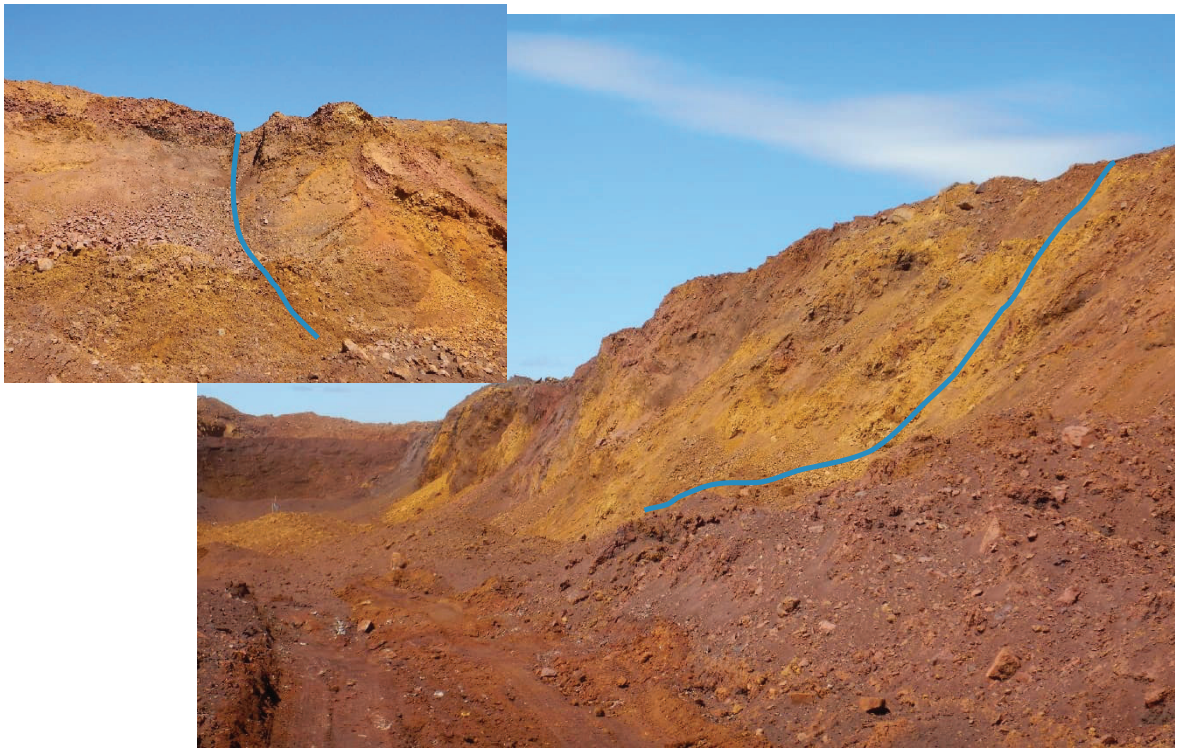

PHOTO 3 – North Slope (final) - Material (weathered rock and overburden) eroded towards the lower level (733 m). Looking west-northwest

PHOTO 4 – West Slope (final) - Locally visible rock mass, minor sloughing (≈1 m); shot rock left at the toe of the face. Looking southwest

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2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

CONSULTANT

wsp

YYYY-MM-DD	2024-11-29
PREPARED	J.-S. HOULE, ING.
DESIGN	J.-S. HOULE, ING.
REVIEW	C.GRAVEL, ING.
APPROVED	C. GAUTHIER, ING.

TITLE

OPEN PIT

PROJECT No	REV	APPENDIX
CA0037100.2914	0	A-2

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PHOTO 5 – South Slope (final) exposed vertical joint set parallel to the bench face; visible folding perpendicular to the slope (at 723 m level). Looking southwest

PHOTO 6 – North Slope (final first three benches; background) - Bottom of the open pit: 713 m level. Local material accumulation on the benches. Looking southwest

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2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

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OPEN PIT

PROJECT No	REV	APPENDIX
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PHOTO 7 – Second to last plateau with material not yet levelled; note the variability in material type for each truck load. Looking west

PHOTO 8 – Lower plateau (new area) in the west end. Some water puddling and settlement. Looking north

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2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

CONSULTANT

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YYYY-MM-DD	2024-11-29
PREPARED	J.-S. HOULE, ING.
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TITLE

WASTE ROCK DUMP

PROJECT No	REV	APPENDIX
CA0037100.2914	0	A-4

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PHOTO 9 – South Slope - East corner. Minor water damage similar to what was observed during the previous inspections. Looking northeast

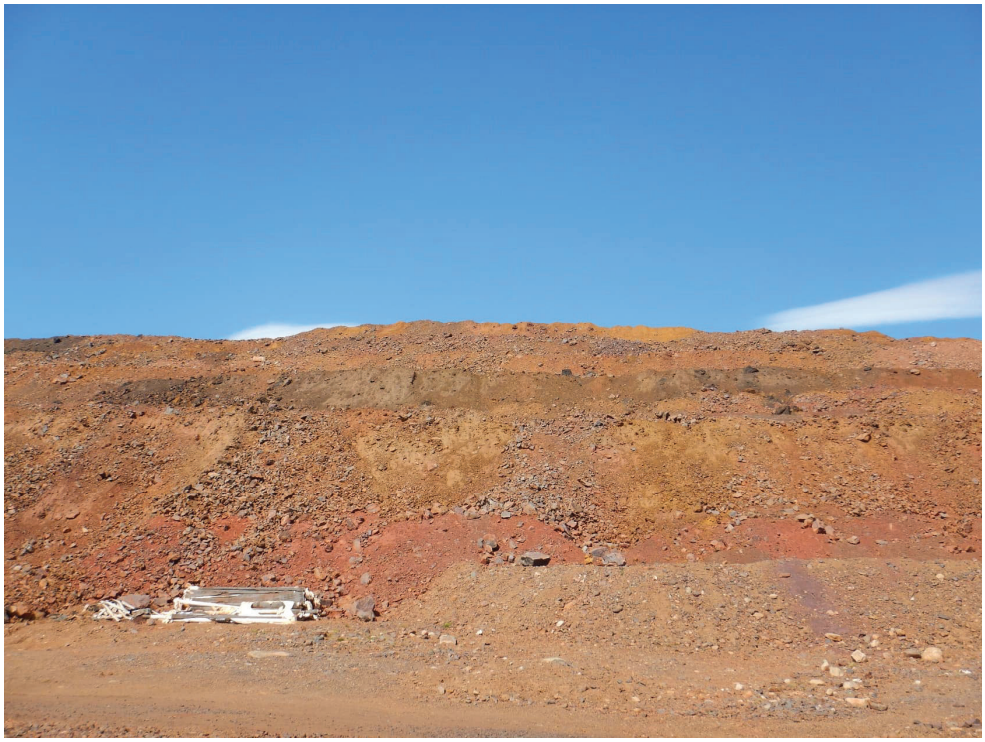

PHOTO 10 – South Slope - Eroded material accumulated at the toe. Looking northeast

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2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

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YYYY-MM-DD	2024-11-29
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WASTE ROCK DUMP

PROJECT No	REV	APPENDIX
CA0037100.2914	0	A-5

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PHOTO 11 – East Slope – Water damage of the slope generating accumulation of fine material at the toe. Looking south-southwest

PHOTO 12 – South Slope - Significant water damage. Looking north

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2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

TITLE

OVERBURDEN DUMP

PROJECT No	REV	APPENDIX
CA0037100.2914	0	A-6

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PHOTO 13 – Ditch from the west limit of the site connecting the west end of the pond. Minor settlement in the riprap on the west inside slope. Looking north-northeast

PHOTO 14 – General View - Bituminous membrane on the north inside slope mostly covered by riprap while the south inside slope has long segments uncovered. Looking east-southeast

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2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

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APPROVED	C. GAUTHIER, ING.

TITLE

SEDIMENTATION POND

PROJECT No	REV	APPENDIX
CA0037100.2914	0	A-7

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PHOTO 15 – General View - Bituminous membrane on the north inside slope mostly covered by riprap while the south inside slope has long segments uncovered. Looking southeast.

PHOTO 16 – Emergency Spillway (west end). Some degraded (weathered) rip rap material in the foreground. Looking southwest.

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TATA STEEL MINERALS CANADA LTD

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PROJECT

2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

TITLE

SEDIMENTATION POND

PROJECT No	REV	APPENDIX
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PHOTO 17 – Overall view of the south inside slope showing covered and exposed bituminous membrane. Signs of settlement at mid slope possibly associated with the water level variations during thaw periods. Looking southeast

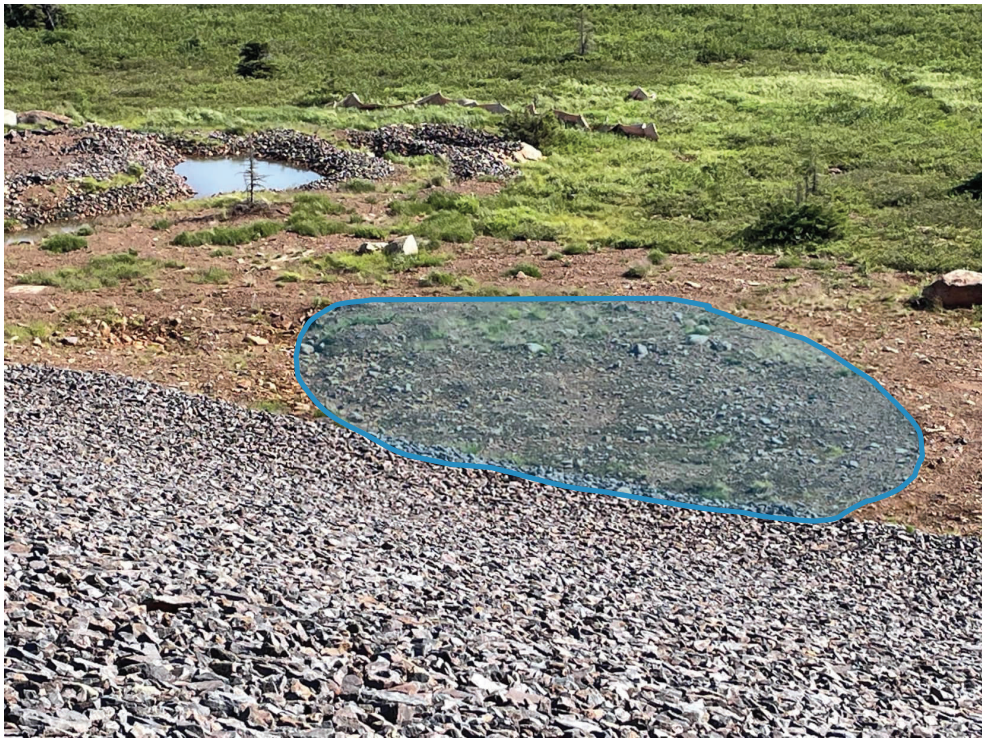

PHOTO 18 – South-Outside Slope - Wet zone at the toe of the pond at about one third of the distance from the east end especially after a period of rain. Looking south

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2024 GEOTECHNICAL INSPECTION, GOODWOD SITE (QUEBEC)

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SEDIMENTATION POND

PROJECT No	REV	APPENDIX
CA0037100.2914	0	A-9

https://wspgroup.sharepoint.com/sites/CA-CA0037100.2914/Shared%20Documents/Forms/AllItems.asp?id=%2Fsites%2FCA%2DCA0037100.2914%2FShared%20Documents%2F06%2E%20Variables%2F001%2DGoodwood%5F2024%5Fgeotech%5Finsp%2FAppendixA%2DPhotos&viewid=6f1 0ef5c%2Db1c2%2D44d18%2D91d1%2D83816a8ad148

Appendix XI. Technical note from Prof. Damase Khasa

Note technique pour la restauration du site Goodwood de la mine TSMC à Schefferville

Contexte

Le Canada constitue l'un des leaders mondiaux de l'industrie minière, tant pour le nombre de métaux et minéraux produits que pour la valeur générée en dollars. En 2018, 60 minéraux et métaux ont été produits et généré 105 milliards de dollars, le minerai de fer étant l'un des principaux produits minéraux avec une valeur de sa production estimée à 3,8G$ selon Ressources Naturelles Canada. Actuellement, la majeure partie de sa production est extraite de la fosse de Labrador, importante ceinture géologique traversant le Québec et le Labrador. L'extraction de minerais de fer dans la région de Schefferville est à l'origine de grands dépôts de résidus miniers (mort-terrain, stériles miniers et résidus miniers fins) dont les caractéristiques physico-chimiques et microbiologiques sont peu propices à la croissance végétale en zones climatiques arctique et alpine de la toundra. Ces résidus miniers contiennent des composés toxiques (notamment le Fe, Mn, Pb, Cu, Cr, etc.) susceptibles de contaminer les sols et par lixiviation et lessivage les nappes phréatiques et les cours d'eau. La durabilité du secteur minier québécois doit entre autres viser la restauration des biens et services écosystémiques après l'exploitation minière dans un contexte où le développement durable et la conscience environnementale prennent de plus en plus d'importance dans l'intérêt public. D'ailleurs, la loi sur les mines de 1995 modifiée en 2013 oblige les industriels à déposer un plan de restauration accompagné d'une garantie financière couvrant 100 % des coûts estimés avant l'octroi d'agrément. En respect de cette loi, différentes stratégies de restauration sont en cours d'exécution ces dernières années au Québec.

Cours normal des affaires (business-as-usual) dans l'industrie de la restauration

Le cours normal des affaires dans l'industrie de la restauration des sites miniers comprennent des méthodes conventionnelles de génie civil (basées sur des techniques telles que la lixiviation des polluants, la solidification / stabilisation, les procédés pyrométallurgiques, les traitements électro-cinétiques, oxydation chimique / réduction des polluants, excavation), des pratiques agronomiques telles que la fertilisation minérale,

l'amélioration mécanique du sol, l'ensemencement hydraulique des espèces herbacées et l'utilisation de grandes quantités d'amendements organiques. L'utilisation d'engrais chaque année peut s'avérer essentielle (niveau élevé de N-P-K) pour la croissance des plantes. Pour les sites à drainage minier acide (DMA), Les travaux actuels de restauration consistent à mettre en place un recouvrement multicouche étanche composé d'une géomembrane, d'un géotextile de protection, d'une couche de matériaux granulaires et d'un horizon de terre végétale sur les pentes plus prononcées. Le mélange de matériaux granulaires et de terre végétale forme un technosol. Ces travaux d'ingénierie civile sont suivis par la végétalisation de la surface du technosol en utilisant des espèces herbacées natives et parfois non indigènes, à architecture racinaire profonde à semi profonde, sans étude approfondie sur les propriétés pédophysiques, pédochimiques et hydrodynamiques du technosol ni sur la dynamique du système racinaire des espèces végétales dans le technosol et en profondeur. Dans de nombreux projets de végétalisation, il est fondamental de connaitre la manière dont les systèmes racinaires s'adaptent et se développent dans le sol. Somme toute, toutes ces méthodes conventionnelles sont très énergivores, coûteuses et ne sont pas durables surtout dans le contexte du Nord canadien où les intrants sont produits au Sud du Canada et transportés vers le Nord à grands frais .

L'approche novatrice des solutions fondées sur la nature à faibles intrants : Route vers la durabilité et la carboneutralité dans l'industrie de la restauration québécoise

Les techniques de phytoremédiation, sont généralement considérées comme moins invasives, des puits de carbone, plus rentables et réparatrices de la structure et des fonctions du sol par rapport aux méthodes conventionnelles de génie civil. pour le rétablissement des biens et services écosystémiques. Au cours de 20 dernières années, la recherche menée par l'équipe du Professeur Khasa à l'Université Laval en réhabilitation des sites miniers en Alberta, au Québec et à l'international, a démontré que les stériles, le mort terrain et les résidus, après exploitation minière, sont généralement dépourvus des micro-organismes symbiotiques bénéfiques au rétablissement des communautés végétales sur les rejets miniers. Afin de remédier à cet état de fait, notre équipe a développé un itinéraire technique de restauration phytobienne adaptée aux rejets de sables bitumineux en Alberta; aux rejets aurifères au Québec et au Burkina Fasso; aux rejets d'ilménite de Madagascar, de charbon

en Afrique du Sud et de métaux lourds en Tunisie. Cet itinéraire appliqué à la toundra forestière, arctique et alpine de la mine de fer de Schefferville au cours de notre projet 2017-MI-202382 Développement durable du secteur minier-I, 3e concours (Isolement, identification et sélection des symbiotes végétaux racinaires en vue d'améliorer la réhabilitation des habitats de la toundra arctique et alpine du Québec affectés par l'exploitation minière). Ce projet financé par le FQRNT en partenariat avec TSMC, Viridis Terra International et, T2 Environnement. nous a permis d'obtenir les résultats novateurs pour la restauration écologique des sites miniers ferrifères : i) 476 microorganismes fongiques associés aux racines de plantes indigènes ayant une importance écologique et culturelle pour les communautés autochtones de la région de Schefferville ont été isolés et 376 isolats ont été identifiés, répartis dans 106 unités taxonomiques opérationnelles; ii) 9 et 4 différents isolats fongiques potentiels ont été respectivement testés *in vitro* et *in vivo* pour leur tolérance à des concentrations élevées en fer; iii) des méthodes simples de propagation et d'inoculation mycorhizienne des espèces clés de la toundra forestière comme *Betula glandulosa*, le *Salix planifolia* et d'amendement ont été testées sur résidus miniers. Le métagénome racinaire et rhizosphérique des espèces clés du site minier de Schefferville a été analysé ainsi qu'une méthode inédite i-chip mise au point pour l'isolement des bactéries difficilement cultivables en milieu axénique. Ces avancées scientifiques et techniques nous permettent maintenant d'envisager leur application immédiate avec des essais pilotes sur le terrain sur le site Goodwood de la mine TSMC à Schefferville dans le cadre de notre projet 0MN - 2022-2023 - Développement durable du secteur minier-II, 3e concours (Utilisation de bio intrants en restauration écologique des sites miniers ferrifères: Essais de démonstration en milieu nordique québécois au Canada). Ce projet financé par le FQRNT en partenariat avec TSMC, Viridis Terra International et, T2 Environnement va nous permettre d'établir en milieu réeel des essais pilotes.

Des prélèvements d'échantillons sur le site de TSMC ont débuté à l'été 2022 et vont se poursuivre à l'été 2023 avant l'implantation des dispositifs expérimentaux. Un dispositif d'environ 2 ha chacun sera installé sur rejets miniers ferrifères avec les trois traitements : 1) cours normal des affaires (*business-as-usual*) dans l'industrie de la restauration consistant en la végétalisation par hydroensemencement herbacé utilisant un volume important d'amendements organiques et fertilisation minérale; 2) traitement innovant à

faibles intrants consistant en la végétalisation avec des semis inoculés en pépinière avec un consortium de champignons mycorhiziens et bactéries fixatrices d'azote préalabalement sélectionnées et un faible volume d'amendements en biochar et compost ou le bioproduit Phytobiomix en cours du développement dans le cadre du projet GENOSCAN finanacé par Sentinelle Nord; 3) le témoin. Nous optons pour les plantations mixtes car en appliquant le concept de parcelles de Nelder modifié pour la combinaison d'espèces de plantes ligneuses et herbacées, l'inoculum microbien et le biochar sur le mélange de plantes dans des essais en serre et sur le terrain sur les stériles et les résidus fins aurifères, nous avons trouvé un effet positif de la densité de plantation sur la productivité des plantes dû à l'amélioration du microclimat et de l'activité microbienne. Les dispositifs agroforestiers que nous allons installer sur le siet Goodwood seront constitués d'un mélange des plantes herbacées locales selon la disponibilité des graines en grande quantité (*Carex* spp., *Eriophorum vaginatum*, *Bromus ciliatus*, *Elymus trachycaulus*, *Panicum spp*., *Poa palustri*) et de plantes ligneuses (aulne crispé-épinette noire-saule planifolié-bouleau glanduleux). Lors de la transplantation des espèecs ligneuses à l'été 2023, les espèces herbacées seront hydroensemencées dans un mélange optimal phytobiomix (graminées-légumineuses-inoculant microbien) développé dans laboratoire de Khasa. L'inoculant microbien sera constitué de l'inoculum commercial mycorhizien (*Rhizophagus irregularis* DAOM 197198) de Premier Tech et des rhizobactéries promotrices de la croissance PGPR disponibles dans notre labo. Pour des raisons pratiques, les dispositifs expérimentaux en tiroirs seront établis, avec les espèces en parcelles principales, les traitements d'amendements en sous-parcelles et les traitements d'inoculation sous sous- parcelles. L'évaluation des paramètres morphoécophysiologiques, du taux de survie et des stocks de carbone au champ sera effectuée à partir de l'été 2024 selon des protocles existants dans nos labos.

Les résultats escomptés des recherches permettront de générer de nouvelles connaissances scientifiques applicables au plan de restauration améliorative et la phytorémediation des haldes de stériles du site Goodwood et utilisées par les partenaires du projet TSMC, Viridis Terra International et T2 Environnement

Références publiées

Disponibles sur demande au laboratoire du professeur Damase Khasa

Appendix XII. Community Engagement and consultation log

	A	B	C	D	E	F
1	**Event Date**	**Communication Type**	**Subject(s)**	**Question(s) / Matter(s) raised**	**Response(s)**	
2						
3	2024-01-12	Email: TSMC to a group of craftswomen of NIMLJ and NNK	Craft promotion project in Matimekush and Kawawa	Exchange on the craft promotion project in Matimekush and Kawawa (12 women in total)	TSMC has taken note of the importance of the women-initiated craft promotion project and will reflect internally on the extent to which this project could be promoted	
4	2024-01-16	Phone call to Chief Réal Mckenzie and Band Councilors members of NIMLJ	Matimekush healing center inauguration and TSMC site visit	Meeting with Chief Real Mckenzie (NIMLJ) to inaugurate the Matimekush-Lac John healing center for people with addiction problems, and visit to the TSMC site	TSMC will improve conditions to receive Chef Réal and his visitors for site visit	
5	2024-01-16	Email: TSMC to NNK	Update - Revenu Sharing and invoices	Discuss on the revenu sharing for 2023-2024 and a few other major invoices	Information provided by TSMC to NNK on revenue sharing and payment of overdue invoices	
14	2024-02-08	Phone call fr. TSMC to NIMLJ Chief	General Update	Discussion w/ Chief on answers made by TSMC to NIMLJ regarding the blockade and NIMLJ's financial issue	Chief Real asked prioritization of FN/IBA payments	
15	2024-02-08	Phone call: TSMC to ITUM Consultant	IBA Implementation meeting	Scheduling of next Committee meeting	A calendar of meetings was submitted	
16	2024-02-08	Phone call fr. NIMLJ to TSMC	NIMLJ's carpentry and joinery training project	NIMLJ's request to TSMC for material support in the form of a contribution to NIMLJ's carpentry and joinery training project	Internal follow-up with the essential services department and proposals for assistance to NIMLJ	
17	2024-02-08	Visioconference with Conrad André and members of the Aster family of NIMLJ	Follow-up on th rail blockade	Follow-up with Conrad André and members of the Aster family on the rail blockage situation linked to the discontent of a group of NIMLJ members	Feedback on the exchanges and discussions initiated between Chief Real, band council members and the group of people concerned to try to find a solution	
18	2024-02-09	Phone call fr. TSMC to Conrad André and members of the Aster family of NIMLJ	Follow-up on th rail blockade	Sharing with Conrad the document associated with the recommendations issued by the Protestant Group during the rail blockade in 2022 and the environmental achievements initiated by TSMC	Members of the Protestant group received the requested document	
19	2024-02-09	Email, Phone: NIMLJ, FNQLSDI & TSMC	TSMC Environmental Information	Many questions fr. NIMLJ Environmental Consultant on water runoff management and other matters	TSMC shared by email and provided access to its Shared Drive which holds extensive information on studies, maps, reports, meetings minutes, etc.	
20	2024-02-09	Phone call fr. TSMC to ITUM	Revenue Sharing	Discussion with Innu Nation's General Manager on Revenue Sharing and Financial	ITUM asked prioritization of IBA payments	
21	2024-02-12	In-person meeting: TSMC, General Manager and Administrator of the Town of Schefferville	Collaboration between TSMC and the Town of Schefferville and the various areas for improvement	Discussions on Schefferville's issues and projects (e.g. development of the town of Schefferville) and on improvements to be made to collaboration in terms of protection or insurance for Schefferville firefighters. As the TSMC site is located in Labrador, Schefferville firefighters would not be covered in the event of a fire on site.	The information has been passed on to TSMC's health and safety manager. He will gather the information and respond to the Town of Schefferville as soon as possible	
22	2024-02-12	Videoconference, In-person meeting: TSMC and ITUM on Employment	Employment statistics, workforce planning, mutual collaboration	Human resources strategies Job opportunities at TSMC Presentation of the Study-Internship Project	Strategy & workforce plan will be provided during the IBA Implementation committee meeting in Sept-Îles	
23	2024-02-13	In-person meeting: TSMC and Naskapi Nation on employment	Implementation of a training program for FNs	Implementation of a training program for heavy machinery operators	10 applicants were received from the Naskapi Nation for the Heavy Equipment Operator program	
24	2024-02-13	In-person meeting: TSMC to NIMLJ	Hockey tournament funding request	Discussions with the NIMLJ sports coordinator regarding TSMC's financial support for the Matimekush youth hockey tournament	A financial contribution was made to Matimekush for this hockey tournament	
25	2024-02-13	In-person meeting: TSMC and Matimekush on Employment	Employment statistics, workforce planning, mutual collaboration	Human resources strategies Job opportunities at TSMC Presentation of the Study-Internship Project	Strategy & workforce plan was provided to the Innu Nation of Matimekush Lac John	
26	2024-02-13	In-person meeting: TSMC, Chief Real Mckenzie and the Band Councilors members	Heavy equipment operator training program - 2024	Exchange with First Nations on heavy equipment operator training program	TSMC provided information on the heavy equipment operator training program	
27	2024-02-13	Videoconference meeting: Chief Mike Mckenzie and ITUM representatives	Employment statistics, workforce planning, mutual collaboration	Human resources strategies Job opportunities at TSMC Presentation of the Study-Internship Project	Strategy & workforce plan will be provided during the IBA Implementation committee meeting in Sept-Îles	

	A	B	C	D	E	F
28	2024-02-15	In-person meeting: TSMC, Group of women representatives from Matimekush-Lac John and Kawawachikamach	Promotion of craft activities by women from Matimekush-Lac John and the Naskapi nation	Meeting and discussions with groups of Innu and Naspaki women on the promotion of craft activities in the communities of Matimekush-Lac John and Kawawachikamach	A schedule of meetings was presented for monitoring and funding the project to promote craft activities by Innu and Naskapi women by TSMC.	
29	2024-02-20	Emails, Phone calls: TSMC to NNK	Follow-up on payments	Follow-up on payments made by TSMC to NNK	NNK asked prioritization of FN/IBA payments	
30	2024-02-21	Videoconference meeting: TSMC and NNK's Representatives	Partnership between INNK and TSMC	Meeting between Chief Theresa, NNK's representatives and the CEO (TSMC) on the NNK renewable energy development project. Request for TSMC's financial contribution to the project.	TSMC will support TSMC Employability meeting with ITUM - Information, Statistics and Projections for 2024	
31	2024-02-21	Videoconference meeting: TSMC and Chief Mike Mckenzie (ITUM)	Partnership between ITUM and TSMC	PG Construction's place in TSMC's business model, commitment contract between PG Construction and Nassima Construction (a company recognised and registered with ITUM), partnership clauses between ITUM and TSMC.	Answers were provided to the questions asked by Chief Mike Mckenzie (ITUM). The purchasing department will follow up with PG Construction to improve the partnership with Nassima Construction.	
33	2024-02-28	VideoConference, in-person meeting with NIMLJ, NNK, ITUM, Innu Nation, NCC	Joint Community HSE Committee Meeting	Operations update Environmental update Goodwood Basin Status Health and Safety update Waste Management, recycling and landfill management status Silver Yard Final Report By-Pass Road Status Action plan - Community Relations department The Newfoundland Hydro project update Progressive rehabilitation efforts made by TSMC update	HSEC Committee recommendations : 1) An effort should be made by TSMC to improve the approach to health and safety at the TSMC site 2) Establish a calendar of activities for the CR department, followed by an Action Plan. 3) Effective presence of TSMC in the communities during major community events. 4) TSMC must take into account the employability of community members on site. 5) TSMC's financial contribution to the communities 6) Latest HSEC committee report made available on Google Drive.	
34	2024-02-29	Email, Videoconference, In-person meeting: NNK, KRG, Makivik, TSMC	Project 2A Env. & Social Monitoring Committee meeting	Operations update Environmental update Goodwood Basin Status The Newfoundland Hydro project update Other matters End of meeting	1) Production results, both for the Mine and the Processing Plant for the current year. (See PowerPoint presentation) 2) Expansion of the domestic landfill completed ; Inspections are carried out to ensure compliance 3) The latest projects and achievements of the Environmental Protection Program. (Please refer to PowerPoint presentation for all the highlights details)	
35	2024-03-27	TSMC's response to NNK management	NNK - Complaint about late payment of invoices due to NNK	Payment schedule requested by NNK	Awaiting the 2022/2023 audit report and setting up a payment schedule for invoices due to NNK	
36	2024-03-27	Phone calls, Videoconference, Emails with NIMLJ (Aster family)	Complaint about environmental problems created by TSMC	Complaint by the Aster family against TSMC concerning environmental problems: red waters of the Howall River and the community's members inability to catch fish and hunt bustards, soil disturbance, etc	Examination of the complaint from the Aster family (NIMLJ) and implementation of a conflict resolution plan: online meetings, site visits with the TSMC environmental team, etc.	
37	2024-03-28	Videoconference meeting: TSMC and NNK's Representatives	Gathering of Aboriginal Elders in Kawawachikamach	Preparation of upcoming cultural activities, in particular as part of the gathering of Aboriginal Elders in Kawawachikamach	After receiving the letter requesting a financial contribution and other forms of support from NNK, TSMC reportedly provided assistance to NNK	
38	2024-04-04	Emails, Phone calls: TSMC to ITUM	Complaints from local companies and ITUM representatives	Complaints from local companies (e.g.: Nassima Construction and Nish Conctruction) and ITUM representatives regarding their partnership with TSMC, through PG Conctruction	Resolution of the complaint through meetings between local ITUM companies, ITUM representatives and the head of PG Construction, under the aegis of TSMC	
40	2024-04-16	In-person meeting in Montreal: TSMC and Administrator of the City of Schefferville	Collaboration between TSMC and the City of Schefferville	Discussions on Schefferville's issues and projects (e.g. development of the city of Schefferville) and on improvements to be made to collaboration in terms of protection or insurance for Schefferville firefighters. As the TSMC site is located in Labrador, Schefferville firefighters would not be covered in the event of a fire on site.	The information has been passed on to TSMC's health and safety manager. He will gather the information and respond to the Town of Schefferville as soon as possible	
41	2024-05-07	Videoconference, In-person meeting: TSMC and ITUM on Employment	Employment statistics, workforce planning, mutual collaboration	Introducing TSMC IBAs signed with ITUM Human resources strategies Job opportunities at TSMC Presentation of the Study-Internship Project	Strategy & Workforce plan will be provided in August 2023	

	A	B	C	D	E	F
42	2024-05-09	Email, Phone: NIMLJ, FNQLSDI & TSMC	TSMC Environmental Information	Many questions fr. NIMLJ Environmental Consultant on water runoff management and other matters	TSMC shared by email and provided access to its Shared Drive which holds extensive information on studies, maps, reports, meetings minutes, etc.	
43	2024-05-30	VideoConference, in-person meeting with NIMLJ, NNK, ITUM, Innu Nation, NCC	Joint Community HSE Committee Meeting	Operations update Environmental update Goodwood Basin Status Health and Safety update Waste Management, recycling and landfill management status Silver Yard Final Report	Key points: - Facilitate a meeting between TSMC and the Jean-Pierre family to provide answers to the family's questions about new drilling planned by TSMC at various locations on their ancestral land - Ensure that the first aid courses given by Roxane on the TSMC site also benefit the surrounding communities, in particular Matimekush and Kawawa. - Ensure that vehicles arriving in town (Schefferville) from the TSMC site are clean and tidy. - Ensure that the road leading to the TSMC site is sprinkled with water to prevent dust and contaminants from flowing into the surrounding lake. - To ensure that the reports associated with the conclusions of the discussions between TSMC and the members of the Matimekush community can be made available on Google Drive in order to check the progress of the work to be carried out in the environmental field	
44	2024-05-31	In-person meeting: Meeting between NIMLJ and TSMC	Financial Concerns of the Innu Nation of Matimekush	Discussion with Chief Real on Revenue Sharing; Financial; Road Maintenance contract, Employment & FNs Training	NIMLJ asked prioritization of FN/IBA payments	
45	2024-06-06	Meeting with ITUM Representatives	Follow-up on IBA commitments	Request for assistance in haul truck driver training; Innu Liaison in process of being hired	TSMC will support	
46	2024-06-15	VideoConference, Phone call, In-person meeting with NIMLJ, NNK, ITUM	Implementation of a summer jobs program for members of TSMC's partner communities	Implementation of a summer jobs program for members of TSMC's partner communities (NNK, ITUM, INMJL), including students and other community members interested in work experience in a mining company (e.g.: TSMC)	After discussions and interviews with candidates, several members of the communities, including Matimekush-Lac John and Kawawachikamach, were selected to work on the TSMC site in various areas of expertise: kitchen helpers, room cleaners, samplers, etc.	
47	2024-06-28	Awareness workshop on Innu culture	Awareness workshop on Innu culture for TSMC employees and subcontractors	Awareness workshop on Innu culture, values and sacred natural sites for TSMC employees and subcontractors; Innu and Naskapi Nations' Elders visit at TSMC site	Innu culture awareness workshop led by members of the Uapashkush association	
48	2024-07-11	VideoConference, Phone call, In-person meeting with NIMLJ- TSMC	Inauguration of the healing center for NIMLJ's members	Preparatory meeting for the inauguration of the Matimekush-Lac John yurt (healing center for people with drug and alcohol addiction problems) for next month	Community event (NIMLJ) in preparation	
49	2024-07-12	In-person meeting: TSMC and NNK's Representatives in Kawawa	Elders' gathering in Kawawa	Upcoming cultural activities - Elders' gathering in Kawawa	TSMC had withheld an amount as a financial contribution to NNK for activities related to Elders' gathering in Kawawa	
50	2024-07-13	In-person meeting beetwen TSMC - NIMLJ and NNK's Representatives	Complaint related to discrimination on TSMC site	Resolution of a discrimination complaint involving two employees at the TSMC site, one aboriginal and the other non-aboriginal	This situation was reportedly handled internally by TSMC's human resources department	
51	2024-07-18	Email, Videoconference, In-person meeting: NNK, KRG, Makivik, TSMC	Project 2A Env. & Social Monitoring Committee meeting	Operations update Environmental update Goodwood Basin Status The Newfoundland Hydro project update Other matters End of meeting	- Production results, both for the Mine and the Processing Plant for the current year. (See PowerPoint presentation) - Expansion of the domestic landfill completed ; Inspections are carried out to ensure compliance - Latest projects and achievements of the Environmental Protection Program	
52	2024-07-31	In-person meeting: TSMC to NIMLJ	Complaint from members of the Matimekush community about the Kamamouran cabin	Complaint from members of the Matimekush community concerning the location of one of TSMC's drilling pits and the Kamamouran cabin (house where members of the Matimekush community used to gather)	Following discussions with representatives of the Matimekush community, a site visit is planned between TSMC and Matimekush representatives for further information and with a view to finding a conciliatory solution	
53	2024-10-09	Email	Timmins 3 North Extensions Mine Development Plan & Rehabilitation & Closure Plan			
54	2024-10-18	In-person TSMC Liaison meeting w/ NNK Mining Liaison, Chief & Councillor	Dust Mitigation	NNK Mining Liaison states that Tata's dust mitigation projects are ineffecive as dust is reaching Annabel Lake.		

	A	B	C	D	E	F
55			Blasting Notices	NNK requests one week's notice before each blast to ensure hunters' safety that go near the mine.	TSMC sends blast notices to local communities 24-48 hours prior to next blas; this is an industry standard and it is not possible to give longer notices for blasts.	
56			Access Road Maintenance	NNK Mining Liaison states that the access road right before the train tracks needs maintenance. Due to its poor condition, it has become very difficult for hunters to navigate these roads.		
57			Committee Meeting	NNK Mining Liaison says the Chief and Council would like to hold a committee meeting, as they are due for one.		
58			Drilling Program for Locals	NNK Mining Liaison notes that the Chief and Council would like to see more locals involved in the drilling operations for Castonguay.		
59			Discrimination Awareness	Councilor and Chief asked the TMSC Liaison to be vigilant for any discrimination against locals.		
60			Caribou Conservation	Councillor and Chief would like Tata to delay blasts as long as possible whenever caribou are spotted near the mine.		
61	2024-10-28	Email	Timmins 3 North Extensions			
62	2024-11-20	Visit to Jimmy Sandy Memorial School	Career Fair and Class Presentation	General questions about operations and job opportunities.		
64	2024-12-12	Fall Newsletter Publishing and Distribution In Matimekush and Kawawachikamach	Information about Community Engagement, Operations Health and Safety and Environment	None	N/A	
65	2024-12-31	Radio Announcements by the TSMC Liaison in Matimekush and Kawawachikamach	Information About Activities and Fall Newsletter	None		
66						

Appendix XIII. Minutes of 2a Committee meetings

TSMC Comité de Suivi Environnemental et Social Projet 2A (Goodwood)
TSMC Project 2A (Goodwood) Environmental & Social Monitoring Committee

Compte rendu de la réunion du comité de suivi environnemental et social du 29 février 2024 par visioconférence. ***/ Minutes of the Environmental and Social Monitoring Committee meeting held on February 29, 2024, by videoconference***

Participants :

Noms / Names	Organisation / Organization
1. Aglaé Boucher-Telmoss (ABT)	Kativik Regional Government (KRG)
2. Lindsay Richardson (LR)	Naskapi Nation of Kawawachikamach (NNK)
3. Billy Shecanapish (BS)	Naskapi Nation of Kawawachikamach (NNK)
4. Michel Bacon (MB)	Naskapi Nation of Kawawachikamach (NNK)
5. Siasi Kanarjuak (SK)	Makivik Corporation (Makivik)
6. Pallav Sinha (PS)	TSMC – Environment
7. Bob Garland (BG)	TSMC – Health & Safety
8. Jean-François Dion (JFD)	TSMC – Environment
9. Rudy Tucker (RT)	TSMC – Operations
10. Mabondzo, Wilfried (WM)	TSMC – Community Relations
11. Rioux, Michel (MR)	TSMC – Community Relations

Note: Ce compte-rendu résume les échanges et les décisions prises durant la deuxième rencontre et s'ajoute au document PowerPoint présenté lors de la réunion / ***These minutes summarize the discussions and the commitments made during the second meeting and are in addition to the PowerPoint presentation shared during the meeting.***

1. Agenda

Les participants à la réunion approuvent l'ordre du jour tel que diffusé par WM avec la convocation à la réunion. / ***Meeting participants approve the agenda as circulated by WM along with the meeting invitation.***

2. Introduction

WM souhaite la bienvenue à Mme Siasi Kanarjuak qui prend la relève de M. Jean-Marc Séguin, à titre de représentante de Makivik. Puis, les participants se présentent à tour de rôle. **WM welcomes Ms. Siasi Kanarjuak, who succeeds Mr. Jean-Marc Séguin as Makivik's representative. Participants then introduce themselves in turn.**

3. Partage Sécurité – Safety Share

RT indique que ce partage devrait dorénavant s'intituler « Partage Santé-Sécurité-Environnement » / ***RT indicates that this share should henceforth be entitled « Health & Safety and Environment or HSE Share ».***

Son partage est effectué en 2 parties. Il poursuit en mentionnant que l'environnement change rapidement. Hier, tous auraient cru que le printemps était arrivé et que la fonte des neiges était débutée. La nuit dernière nous avons eu de la pluie et à 5h00 ce matin, la température était de 3 degrés Celsius et maintenant, à 9h00, il fait moins 16 degrés, avec de forts vents. Pour le volet Santé-Sécurité, des conditions très glissantes ont été créées par la pluie et le gel, par conséquent il est important d'être très prudent pendant nos déplacements à pied ou en voiture. Pour le volet

Environnement, cela nous rappelle que la fonte des neiges approche et que toutes les mesures doivent être en place pour contrôler les écoulements d'eaux et ainsi prévenir les impacts non-désirés. **It is divided into two parts. He goes on to say that the environment is changing rapidly. Yesterday, everyone would have thought spring had arrived and the snow was starting to melt. Last night we had rain and at 5 o'clock this morning the temperature was 3 degrees Celsius and now, at 9 o'clock, it's minus 16 degrees, with strong winds. In terms of health and safety, the rain and frost have created very slippery conditions, so it's important to be very careful when walking or driving. For the environment, it's a reminder that snowmelt is approaching, and all measures must be put in place to control water runoff and prevent unwanted impacts.**

4. Environnement - Mise à jour / Environment – Update

PS présente les plus récents projets et réalisations du Programme de protection environnementale. (Prière de consulter la présentation PowerPoint pour les détails des faits marquants) / ***PS presents the latest projects and achievements of the Environmental Protection Program. (Please refer to PowerPoint presentation for all the highlights details)***

1. Bassin de Goodwood ***/ Goodwood Basin***

PS a fait un rappel sur les travaux réalisés en 2022 et 2023 et signale que la mise en service finale et le démarrage de l'Unité de Traitement des Eaux aura lieu tout de suite après la fonte des neiges dès que le bassin aura été alimenté en eau. **PS recalls the work carried out in 2022 and 2023 and specifies that the final commissioning and start-up of the water treatment unit will take place immediately after the snow melts once the basin has been supplied with water**.

2. Unité de Traitement des eaux - Goodwood ***/ Goodwood Water Treatment Unit***

PS décrit le procédé utilisé par cette Unité de Traitement. **PS describes the process used by this processing unit.**

➢ Processus de traitement: Élimination des matières en suspension totales (MEST) et des métaux dissous par filtration et précipitation. // **Treatment Process: Removal of total suspended solids (TSS) and dissolved metals by filtration and precipitation.**

3. Route de transport de minerai Goodwood ***/ Goodwood Haul Road***

➢ Le plan de déneigement est en cours de mise en oeuvre et des mesures seront prises pour atténuer l'apparition de l'eau rouge **// Snow-clearing plan is being executed and measures to be placed during freshet to mitigate occurrence of red water.**

➢ Lac Morley, Km 22 et Km 28 –Finalisation des améliorations de la gestion de l'eau initiées à l'été 2024 // **Morley Lake, Km.22 and Km.28 –Finalization of water management upgrades initiated in Summer 2024**.

➢ Ruisseau Greenbush, ruisseau Kivivic et ruisseau Joan –Conception d'ingénierie à réaliser et début destravaux. // **Greenbush Stream, Kivivic Brook and Joan Brook –Engineering design to be carried out and initiation of works.**

➢ L'hydroensemencement pour toutes les zones exposées sera effectué en 2024. **Hydroseeding for any exposed areas to also be done in 2024.**

4. Suivi Environnemental ***/ Environmental Monitoring***

a. Eau / ***Water***

Pour le bénéfice de SK, qui siège nouvellement sur le Comité, PS et RT font une description des différents produits miniers et des différentes opérations. (Ex : DSO = définition de l'acronyme et description du procédé minier. **For the attention of SK, a new member of the Committee, PS and RT describe the various products and mining operations. (e.g. DSO = definition of the acronym and description of the mining process.**

b. Air

➢ **Snow Sampling: Planned for April 2024 /** Échantillonnage de neige: Prévu pour avril 2024

➢ **Dust Jars (5 stations per month from Spring to Fall) /** Jarres de poussière (5 stations par mois du printemps à l'automne)

➢ **NO2 (4 stations per month all year round) /** NO2 (4 stations par mois pendant toute l'année)

➢ **PQ200 particulate monitoring (3 QC stations in Spring to Fall) /**
Surveillance des particules PQ200 (3 stations QC du printemps à l'automne)

➢ **Continuous Air Monitoring: BAM1020 (particulates) and NOX analyzer (nitrogenoxides) monitors with information transmitted in real time to NL Gov. /** Surveillance continue de l'air: Moniteurs BAM1020 (particules) et analyseurs de NOX (oxydes d'azote) avec l'information transmise en temps réel au gouvernement de NL.

➢ **Stack Testing: Completed in 2023. Nominal results were observed. Air modeling to be finalized with expert in 2024. /** Tests de cheminée : Complétés en 2023. Des résultats nominaux ont été observés. Modélisation de l'air à finaliser avec un expert en 2024.

C. Rapports / Reporting

PS présente la liste des rapports réglementaires complétés et en cours**. PS presents the list of completed and ongoing regulatory reports.**

LR suggère que lors de la prochaine réunion de ce Comité Goodwood, un sommaire du Rapport annuel Goodwood soit présenté. PS est d'accord! **LS suggests that at the next meeting of Goodwood committee, a summary of the Goodwood Annual Report be presented. PS agreed that!**

5. Projets Environnementaux ***/ Environmental Projects***

PS énumère et décrit chacun des projets environnementaux en cours**. PS lists and describes each of the current environmental projects.**

ABT indique que n'ayant jamais visité le site, il lui est difficile de se situer par rapport aux endroits mentionnés dans ces projets. Elle demande s'il est prévu une visite de site lors des prochaines réunions. **ABT points out that she has never visited the site, so it is difficult for her to situate herself in relation to the places mentioned in these projects. She asks whether a site visit is planned for the next meetings.**

PS et WM répondent que c'est bien l'intention de TSMC de tenir ces réunions à Schefferville, autant que possible, assorties d'une visite de site. D'ailleurs, la prochaine réunion aura lieu en Mai prochain à Schefferville et une visite sera organisée. **PS and WM reply that TSMC intends to hold these meetings in Schefferville whenever possible, accompanied by a site visit. In fact, the next meeting will be held in Schefferville in May, and a site visit will be organized.**

PS s'engage à ajouter des cartes des zones/régions concernées par ces projets de façon à faciliter la compréhension de tous les membres du Comité, et en particulier, les nouveaux membres. **PS undertakes to add maps of the areas/regions concerned by these projects to facilitate better understanding by all Committee members, especially new ones.**

6- Gestion des déchets ***/ Waste Management***

a. Site d'enfouissement ***/ Landfill***

ABT indique que lors de certains survols du site en hélicoptère, elle a pu observer un très grand nombre d'ours noirs près du site d'enfouissement et elle demande si TSMC prend des mesures pour prévenir que les ours entrent sur le site. **ABT reports that during some helicopter flights over the site, it has observed many black bears near the landfill and asks whether TSMC is taking measures to prevent the bears from entering the site.**

PS répond que dans une certaine mesure nous préférons que les ours soient près du site d'enfouissement plutôt que près du campement, là où ils seraient attirés par les odeurs de cuisson et de nourriture. Cela dit, nous prenons des mesures pour que les gens ne puissent se rendre à ce site, mais nous ne prenons pas de mesures pour empêcher les ours d'y accéder. **PS replies that, to a certain extent, we prefer the bears to be near the dump rather than near the camp, where they would be attracted by the smells of cooking and food. That said, we take measures to prevent people from accessing the site, but we don't take measures to prevent bears from accessing it.**

BG fait aussi remarquer que les ours transitent régulièrement du site d'enfouissement de TSMC à celui de la Communauté (proche de Schefferville). Quand TSMC recouvrait la nourriture du site à chaque jour, les ours se dirigeaient vers le campement mettant à risque les occupants et occasionnant des entrées par effraction dans les locaux. Nous nous assurons de protéger les personnes et les animaux en minimisant les interactions. **BG also points out that bears regularly transit from the TSMC landfill to the Community landfill (near Schefferville). When TSMC covered the food on the site every day, the bears would head for the camp, endangering the occupants and causing break-ins on the premises. We take care to protect people and animals by minimizing interactions.**

b. Déchets dangereux ***/ Hazardous waste***

c. Unité de traitement des eaux ***/ Wastewater Treatment Plant***

7- Restauration progressive ***/ Progressive Rehabilitation***

PS présente les projets de recherche en cours pour optimiser les efforts de re-végétalisation sur les zones mises à découvert. **PS presents current research projects to optimize revegetation efforts in exposed areas.**

ABT mentionne qu'elle a vu des projets où on ajoutait des mycorhizes afin de compenser pour le faible niveau de matières organiques dans les sols à re-végétaliser. ***ABT mentions that it has seen projects where mycorrhizae were added to compensate for the low level of organic matter in the soils to be revegetated.***

Pallav et JFD confirment que les recherches en cours incluent aussi cette technique. **Pallav and JFD confirm that current research also includes this technique.**

8. Cour de triage Silver ***/ Silver Yard***

PS présente un état d'avancement des travaux de décontamination de Silver Yard. **PS presents a progress report on decontamination work at Silver Yard.**

LR demande si TSMC a développé un Plan d'action d'urgence pour minimiser les impacts lors de tels déversements, incluant un plan de communication. **LR asked if TSMC had developed an emergency action plan to minimize the impact of such spills, including a communication plan.**

PS rappelle que lors de cet incident, aucun employé de TSMC n'était impliqué. Le déversement s'est produit avec un opérateur du chemin de fer. Ensuite, il a été déterminé qu'il appartenait à TSMC de nettoyer les lieux puisque TSMC est le détenteur du bail de surface (Surface lease). Suite à cet incident, les employés ont été formés sur les bonnes actions à entreprendre incluant les procédures de se reporter à la hiérarchie. Pour ce qui concerne de la communication vers les Communautés, PS travaille avec WM pour inclure la procédure dans le Plan de Communication pour les Communautés. Lors de tels incidents, différentes communications réglementaires sont prévues et nous ajouterons les Communautés à la liste des instances à informer. **PS points out that no TSMC employees were involved in this incident. The spill occurred with a rail operator. It was subsequently determined that it was TSMC's responsibility to clean up the site, as TSMC holds the surface lease. Following this incident, employees received training on the steps to be taken, including procedures for reporting to line management. About community communication, PS is working presently with WM to include the procedure in the community communication plan. During such incidents, various regulatory communications are planned, and we will add communities to the list of authorities to be informed.**

BG ajoute que TSMC procède présentement à un audit avec un expert externe (TetraTech) et il est apparu que TSMC a bien un Plan de communication en cas d'urgence, cependant pas de Plan de communication en cas de crise (Crisis Communications Plan). Dans le Plan de Communication en cas de crise (L'incident de Silver Yard avait le potentiel pour être une « crise »), la procédure de communication vers les Communautés en fera partie. **BG adds that TSMC is currently being audited by an external expert (TetraTech) and it has emerged that TSMC has an emergency communication plan, but not a crisis communication plan. The crisis communication plan (the Silver Yard incident had the potential to be a "crisis") will include the procedure for communicating with communities.**

LR demande quels sont les voies normales de communication avec les communautés. **LR asks what the normal channels of communication with communities are.**

PS répond que ces voies de communication seront précisées dans le Plan de Communication pour les Communautés sur lequel WM travaille. **PS replies that these communication channels will be specified in the community communication plan WM is working on.**

WM précise que le Plan de Communication sera présenté au CHSE, lundi prochain (4 mars). **WM The communication plan will be presented to the CHSE next Monday (March 4).**

ABT suggère d'utiliser la radio communautaire pour informer très rapidement et efficacement les membres de la Communauté. WM est d'accord d'autant plus que notre nouvel agent de relations communautaires parle aussi les langues Innue et Naskapie. **ABT suggests using community radio to inform community members quickly and effectively. WM agrees, especially since our new community relations officer also speaks the Innu and Naskapi languages.**

BS ajoute que TSMC doit faire davantage partie des événements dans la Communauté (être présent et participer) tels que le Carnaval, le Festin Traditionnel, la Foire aux Emplois, etc…). **BS adds that TSMC must become more involved in community events (be present and participate) such as the Carnival, the Traditional Feast, the Job Fair, etc...).**

WM est d'accord. TSMC a participé la Foire aux Emplois l'année dernière et en fera partie cette année aussi. **WM agrees. TSMC participated in last year's job fair and will do so again this year.**

RT recommande qu'un calendrier d'événements dans la communauté soit produit et transmis à TSMC pour qu'on puisse planifier une présence et une participation optimale. **RT recommends that a calendar of events/activities in the community be drawn up and forwarded to TSMC so that optimum presence and participation can be planned.**

BS souhaite que l'agent de Relations Communautaires de TSMC soit plus souvent présent dans la Communauté et qu'il rencontre le coordonnateur des activités. **BS would like TSMC's community relations manager to be present in the community more often and to meet with the activity's coordinator.**

9. Points de suivi ***/ Follow-up items***

PS informe les membres du Comité que les rapports environnementaux annuels et mensuels ont été téléchargés sur le Share Drive qui est à jour pour 2023. **PS informs Committee members that the annual and monthly environmental reports have been uploaded to the Share Drive and are up to date for 2023.**

PS : Pour ce qui est de la surveillance en continu de la qualité de l'air dans les Communautés de Matimekush et Kawawa, il est nécessaire d'explorer d'autres options que les stations de TSMC, qui sont toutes requises pour les sites d'activités. **PS: For ongoing air quality monitoring in the communities of Matimekush and Kawawa, it is necessary to explore options other than the TSMC stations, which are all required for the activity sites**

Considérant que les présentations d'aujourd'hui et d'hier sont identiques RT suggère qu'on envisage de rassembler les membres des 2 Comités et qu'on fasse la réunion sur une journée complète plutôt qu'en 2 demi-journées. **Given that today's and yesterday's presentations are identical, RT suggests that we consider bringing the members of both committees together and holding the meeting over a full day rather than two half-days.**

LR suggère que l'on retourne à l'origine des raisons pour lesquelles 2 comités distincts ont été créés. **LR suggests going back to the original reasons for creating two separate committees.**

Le sujet sera abordé hors-réunion pour voir comment on peut optimiser le temps de chaque membre des Comités ou personnaliser davantage la présentation de chaque Comité. **The subject will be discussed outside the meeting to see how we can optimize the time of each committee member or further personalize the presentation of each committee.**

5. Santé-Sécurité – Mise à jour / Health and Safety – Update

BG présente les statistiques, les améliorations réalisées et les faits marquants liés à la Santé et la Sécurité sur le site. **BG presents statistics, improvements and highlights concerning health and safety on the site.**

BG fournit une description, privilégiée pour les membres du Comité, des circonstances entourant le tragique accident mortel d'octobre 2023. **BG provides a description, privileged to Committee members, of the circumstances surrounding the tragic fatal accident of October 2023.**

BG poursuit en décrivant les activités de la Clinique médicale pour la période du 1er septembre 2023 au 24 février 2024. Sur 177 jours, 670 clients ont été reçus à la Clinique. **BG then describes the activities of the Clinique Médicale from September 1, 2023, to February 24, 2024. In 177 days, 670 customers were seen at the Clinic.**

MB demande où est enregistré l'incident concernant la tentative de suicide survenue sur le site. **MB asks where the incident concerning the attempted suicide on the site is recorded.**

BG explique les circonstances de l'alerte et du suivi qui a mené à l'évacuation de la personne, qui a heureusement survécu, et ajoute que ce cas a certainement été enregistré parmi les 21 cas de santé mentale et dans les 6 cas de Soins de haut niveau. **BG explains the circumstances of the alert and the follow-up that led to the evacuation of the person, who fortunately survived, and adds that this case was certainly recorded among the 21 mental health cases and in the 6 high-level care cases.**

BG présente les plans de la future Clinique Médicale qui sera installée sur le site en juillet prochain, pour remplacer l'ancienne clinique perdue lors de l'incendie de février dernier. **BG presents plans for the future medical clinic to be set up on the site next July, replacing the old clinic lost in last February's fire.**

BG mentionne l'achat d'un nouvel équipement pour le dépistage et rappelle les valeurs de TSMC relativement à sa politique Alcool et Drogues sur le site. **BG mentions the purchase of new screening equipment and reiterates TSMC's values about its alcohol and drug policy on site.**

Prière de se référer à la présentation PowerPoint disponible sur Google Drive pour de plus amples informations. / ***Please refer to the PowerPoint presentation available on Google Drive for more information.***

6. Opérations – Faits marquants / Operations Highlights

BG présente les faits marquants santé-sécurité et environnement ***/ BG covers the HSE highlights.***

RT présente les résultats opérationnels de l'année en cours. ***/ RT presents all the Production results, both for the Mine and the Processing Plant for the current year.***

Pour l'année de production se terminant le 31 mars 2024, nous avions une planification s'étalant jusqu'à fin septembre 2023 afin de maximiser la production DSPO pendant la période estivale. Puis nous continuons de travailler sur les performances du concentrateur en conjonction avec les attentes des liens et les prix du marché. **For the production year ending March 31, 2024, we had planned to operate until the end of September 2023 to maximize DSPO production during the summer period. We then continue to work on concentrator performance in conjunction with linkage expectations and market prices.**

Deux événements majeurs ont affecté notre capacité de production : le tragique accident mortel d'octobre dernier et les incendies de forêt de juin 2023. Néanmoins, nous avons connu une bonne année de production. En revanche, le transport ferroviaire et l'expédition vers les clients ont souffert. En effet, moins de produits expédiés signifie moins de revenus. **Two major events affected our production capacity: the tragic fatal accident last October and the forest fires in June 2023. Nevertheless, we had a good production year. On the other hand, rail transport and shipping to customers suffered. Less product shipped means less revenue.**

Nous avons suspendu les opérations du 20 décembre au 15 février pour la période hivernale, ce qui a permis d'effectuer des travaux de maintenance sur le concentrateur. **We suspended operations from December 20 to February 15 for the winter period, allowing us to carry out maintenance work on the concentrator.**

Le programme de formation des chauffeurs de camions de transport de minerai se poursuit et nous allons étudier les possibilités d'emplois saisonniers et techniques pour les opérateurs de l'usine de traitement des eaux. **The training program for ore truck drivers is continuing, and we will be exploring seasonal and technical employment opportunities for water treatment plant operators.**

Prière de se référer à la présentation PowerPoint disponible sur Google Drive pour de plus amples informations. / ***Please refer to the PowerPoint presentation available on Google Drive for more information.***

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6. Varia

LR demande si les membres de la commission recevront les procès-verbaux révisés des réunions précédentes à la suite de commentaires et d'observations. **LR asked if commission members would receive revised minutes of previous meetings following comments and observations.**

WM Oui, cela sera fait dès que les commentaires et observations auront été pris en compte et que des modifications auront été apportées. **WM Yes, this will be done as soon as comments and observations have been considered and changes made.**

LR demande pourquoi le Plan de Communication n'est pas discuté dans ce Comité. **LR asks why the communication plan is not discussed in this committee.**

WM considère que le plan de communication concerne l'autre comité qui réunit des représentants des communautés environnantes de Kawawa, Matimekush-Lac John, Uashat et Labrador. **WM considers that the communication plan concerns the other committee, which brings together representatives from the surrounding communities of Kawawachikamach, Matimekush-Lac John, Uashat and Labrador.**

LR croit que les représentants des Inuits du Nunavik ont de l'expérience avec d'autres entreprises minières et que cela pourrait être utile pour l'évaluation du Plan de Communication de TSMC. **LR believes that the Nunavik Inuit representatives have experience with other mining companies and that this could be useful in evaluating TSMC's communication plan.**

LR mentionne le mécontentement des populations (les chasseurs en particulier) concernant la « By-Pass Road ». **LR mentions the discontent of the populations (hunters in particular) concerning the "By-Pass Road".**

WM planifie une rencontre avec les chasseurs lors de son prochain séjour à Schefferville, fin avril. **WM plans to meet with hunters during his next visit to Schefferville at the end of April.**

RT ajoute que des travaux ont été effectués l'automne dernier sur le chemin de contournement existant afin de le rendre plus praticable. La principale préoccupation soulevée hier (28 février) lors de la réunion avec les membres du conseil de Kawawa concernait les sections du chemin de halage qui sont parallèles à la route de contournement. Avec la révision actuelle du projet Howse, une attention particulière sera portée à ces sections. Les discussions se poursuivront. **RT adds that work was carried out last fall on the existing bypass road to make it more passable. The main concern raised yesterday (February 28) at the meeting with Kawawa council members**

concerned the sections of the haul road that run parallel to the bypass road. With the current revision of the Howse project, particular attention will be paid to these sections. Discussions will continue.

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7. Prochaine réunion ***/ Next Meeting***

La prochaine rencontre du comité est prévue en mai prochain 2024 à Schefferville. WM consultera les membres lors de la diffusion du compte-rendu de la présente réunion, dans les semaines à venir. **The next committee meeting is scheduled in May in Schefferville. WM will consult the members when sharing the meeting's minutes, in the upcoming weeks.**

8. Fin de la Réunion **/ End of Meeting**

La réunion se termine à Midi / ***The meeting ends at Noon.***

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